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ABSTRACT

As part of a broad investigation of the role of large-scale, satellite-based, educational telecommunication systems, the trends and issues in early childhood education in relation to electronic delivery are discussed in some detail. The population and numbers currently served by pre-primary programs, and school setting by type of control (public or private financial support) are discussed after an introductory section which defines terms. Alternative approaches to early childhood education such as daycare, infant and toddler care, toy lending libraries, and home start are presented next, and following this section is a discussion of the preconditions for technological delivery and programing techniques for programs for preschoolers, for their parents, and for their teachers. An analysis of the cost of several alternative approaches to the delivery of early childhood education is provided, and some issues surrounding the control of early childhood education are explored. Recommendations concerning the large-scale electronic delivery of early childhood education concludes the report. (SH)

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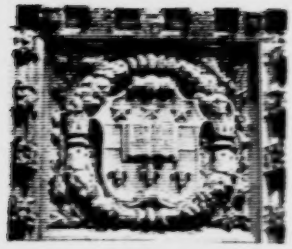

WASHINGTON UNIVERSITY

MEMORANDUM No. 73/2 MAY, 1973

EARLY CHILDHOOD EDUCATION:

STATUS, TRENDS, AND ISSUES RELATED TO

ELECTRONIC DELIVERY

DONNA ROTHENBERG

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WASHINGTON UNIVERSITY / ST. LOUIS / MISSOURI 63130

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PROGRAM ON APPLICATION OF COMMUNICATIONS SATELLITES
TO EDUCATIONAL DEVELOPMENT

Center for Development Technology
Washington University

Memorandum No. 73/2

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May, 1973

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SUMMARY: EARLY CHILDHOOD EDUCATION: STATUS, TRENDS, AND ISSUES RELATED TO ELECTRONIC DELIVERY

This memorandum is devoted to the status of, and trends and issues within, early childhood education which are related to the possibilities of electronic delivery of this educational service. This study is part of a broader investigation of the role of large-scale, satellite-based educational telecommunications systems. Thus, data are analyzed and trends and issues discussed to provide information useful to the systems designer who wishes to identify and assess the opportunities for large-scale electronic delivery in early childhood education.

A pedagogic specialty of growing interest in recent years, early childhood education is concerned with the child during his youngest, most formative years prior to the mandatory school entrance age of either 5 or 6. Therefore, instruction at this level need not take place in a formal school setting; most early childhood education occurs in non-traditional settings such as the home, care centers, or nursery schools. Day care, or child care services, refers to the concept of a non-related adult caring for the child; this too may take place in a variety of settings ranging from institutional arrangements to care in a private home, other than the child's own, the latter setting referred to as a family day care home. Early childhood education and day care are not mutually exclusive; day care may include educational services, and pre-primary educational programs may include additional services for the child, such as meals and medical examinations. A distinction may occur over the age group served by each: "early childhood education" usually implies a clientele between 3 and 5 years-old, and "day care" clientele is somewhat weighted in favor of those 3 and under.

As of 1970, there were more than 17 million Americans between the ages of 0-5, who may thus be viewed as potential participants in either early childhood education or day care. During that year, 4.1 million 3-to-5 year olds were enrolled in preprimary educational programs. As of 1969, 518,000 children were in day care centers and 120,000 youngsters were in family day care homes. The 1969 figures should be viewed as minimum figures for each institutional arrangement.

There are 3 markets for early childhood education. The first is comprised of the youngsters themselves. Instruction for this market is designed to impart rudimentary cognitive skills, such as language, acquisition and basic concepts for working with numbers, or necessary affective skills, such as the ability to work within a group. Materials currently abound for servicing this market, ranging from the televised instruction of "Sesame Street" or "Mister Roger's Neighborhood" to print and records, as evidenced by non-broadcast materials designed by The Children's Television Workshop. Although there has been a great deal of effort to produce educational materials for this market, much of this material has not been initially designed for electronic dissemination. The second market for early childhood education is comprised of parents of pre-schoolers. Only recently, with renewed attention tc early childhood services, has this market been identified as such. Educators have recognized the need to instruct many parents in the desireability of preparing their children for meaningful schooling by working with them while still at home to lay the groundwork for cognitive and affective skill acquisition. Strategies include awakening the parents to the possibilities inherent in toys for educational play and providing follow-up for instruction to insure retention. Parental instruction may take place in specially-designed groups, such as the Toy Lending Library, or through home visitation in conjunction with televised instruction, as exemplified by the preschool program of the Appalachian Educational Laboratory. The third market for early childhood education is composed of the operating staff of early childhood services programs; this would include professional teachers and administrators, paraprofessional aides, and volunteers. The extent of this market is difficult to quantify. It's potential may be surmised by United States Department of Labor projections which anticipate a need for 23,000 child care workers annually during the eight years between 1972-1980. It is assumed that 5,000 early childhood educators will be graduated from teacher training institutions each year; therefore, the remaining 18,000 spots will be filled by recruitment and upgrading of paraprofessionals. Instruction at the paraprofessional level may include the rudiments of effective child care as well as course work that could be credited towards professional certification. Programming could be devised to keep professional early childhood educators and administrators current of developments in their field.

The costs attached to early childhood education or services are highest for group-based activities for children. The most expensive settings are family day care homes and day care centers; operating costs will be at least $2,000 annually per child assuming a comprehensive care program including education. Other center-based programs and their 1970 prices are as follows: Head Start -- $1,050 per child; Kindergarten -- $900-$1,700 per child; in-school pre-Kindergarten -- $200-$780. Approaches in the moderate price range include home visitation by a trained paraprofessional for parent training, the pre-school program of the Appalachian Educational Laboratory and center-based parent training programs. The Appalachian Educational Laboratory pre-school program, the only example to use electronic dissemination, costs $242.15 per child for televised instruction, home visistation to provide parent training, and regularly-scheduled group activities for children. Televised instruction for either parent or child is the least costly option. "Sesame Street," a celebrated example of direct-to-home pre-primary instruction, is estimated to cost $1.00-$1.29 per child per year.

Such costs seem to place the initiative for extension of early childhood education and/or services at the grassroots level. Therefore, public support will be a function of public perception of need. Trends seemingly favorable to this include the amount of attention and discussion about early childhood education in the public arena, reassessment of the economic role of women, interest in welfare reform, and arguments for preventive rather than remedial education. If public feeling continues to be receptive to extension of early childhood education and/or services, this should be with full realization of the need for a sizeable financial commitment. Extension of early childhood education may then become greatly reliant upon the feasibility of delivering quality services in a cost efficient manner in order to fully satisfy the American public in this age of accountability.

Control of early childhood education has traditionally been left to the parent. In spite of recent public discussion over the desireability of publicly extending pre-primary education and/or early childhood services to more people, events seem to indicate that provision of these services will continue to rest with parental initiative. Governmental budgetary exigencies and the Federal Revenue Act of 1971 point in that direction,

barring state, and/or local initiatives which may be dependent upon available funds from revenue sharing.

There appears to be considerable potential for using large-scale electronic technology to deliver material applicable to early childhood education. The prospects are particularly favorable for television, whether the medium is used individually as in the case of "Sesame Street" when televised into the individual home, or in conjunction with person-to-person reinforcement as in the work of the Appalachia Educational Laboratory. The use of trained paraprofessionals for person-to-person reinforcement by many early childhood education programs delivered in various ways highlights the need for effective training procedures. Mediated instruction for early childhood paraprofessionals may provide quality instruction in a cost-efficient manner, and should be more thoroughly explored. Less clearly defined are the prospects for interactive electronic media, particularly two-way audio and interactive television to service the three early childhood education markets, although the forthcoming ATS-F Rocky Mountain Demonstration may provide some useful information. The establishment of accessible computer data banks on early childhood materials and services is a potential development. Although early childhood programmers are now investigating new delivery mechanisms and designing a variety of media-personnel mixes, the quality of the final product will also depend upon the caliber of the programming. Program quality will be an important factor in determining whether the potentialities of electronic media will be used or misused.

EARLY CHILDHOOD EDUCATION:

STATUS, TRENDS, AND ISSUES RELATED TO ELECTRONIC DELIVERY

1. INTRODUCTION AND DEFINITION OF TERMS*

This memorandum contains an assessment of the prospects for use of large-scale, electronic delivery of materials and technology for use in early childhood education. First, the current status of early childhood education is examined. Based upon these findings, an estimate is made of future trends within this educational specialty and the implications these hold for the role of large-scale electronic technology. Assessment of its future role is partially based upon the cost structure of early childhood education and services, and the cost efficiencies which could be realized through the utilization of large-scale, electronic dissemination of pertinent materials. It is hoped that the information contained in this memo will provide input useful to those involved in the design of large-scale, satellite-based educational telecommunications systems.

Early Childhood Education is a pedagogic specialty dealing with children during their youngest, formative years. The upper age limit is generally recognized to be six years, by which time the child has entered the formal educational structure. Therefore, the thrust of Early Childhood Education takes place in what would normally be considered non-traditional environments--the home, care centers, nursery schools. In some of these settings, educational programs designed for pre-school age children have been developed.

Pre-primary programs, as defined by the National Center for Educational Statistics, are a "...set of organized educational experiences intended for children attending pre-kindergarten and kindergarten classes. Such a program may be offered by a public or nonpublic school or by some other

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*The author is grateful to the many people who aided in the preparation of this memorandum. Foremost among these is Professor Robert P. Morgan who provided guidance and painstakingly read the various drafts of this report. The author also wishes to thank Dr. Thomas Johnson and his staff at the National Program of Early Childhood Education for the use of their vast resources and many helpful discussions. Mrs. Emily Pearce and Miss Donna Barnes skillfully typed the manuscript and supervised the printing of this report.

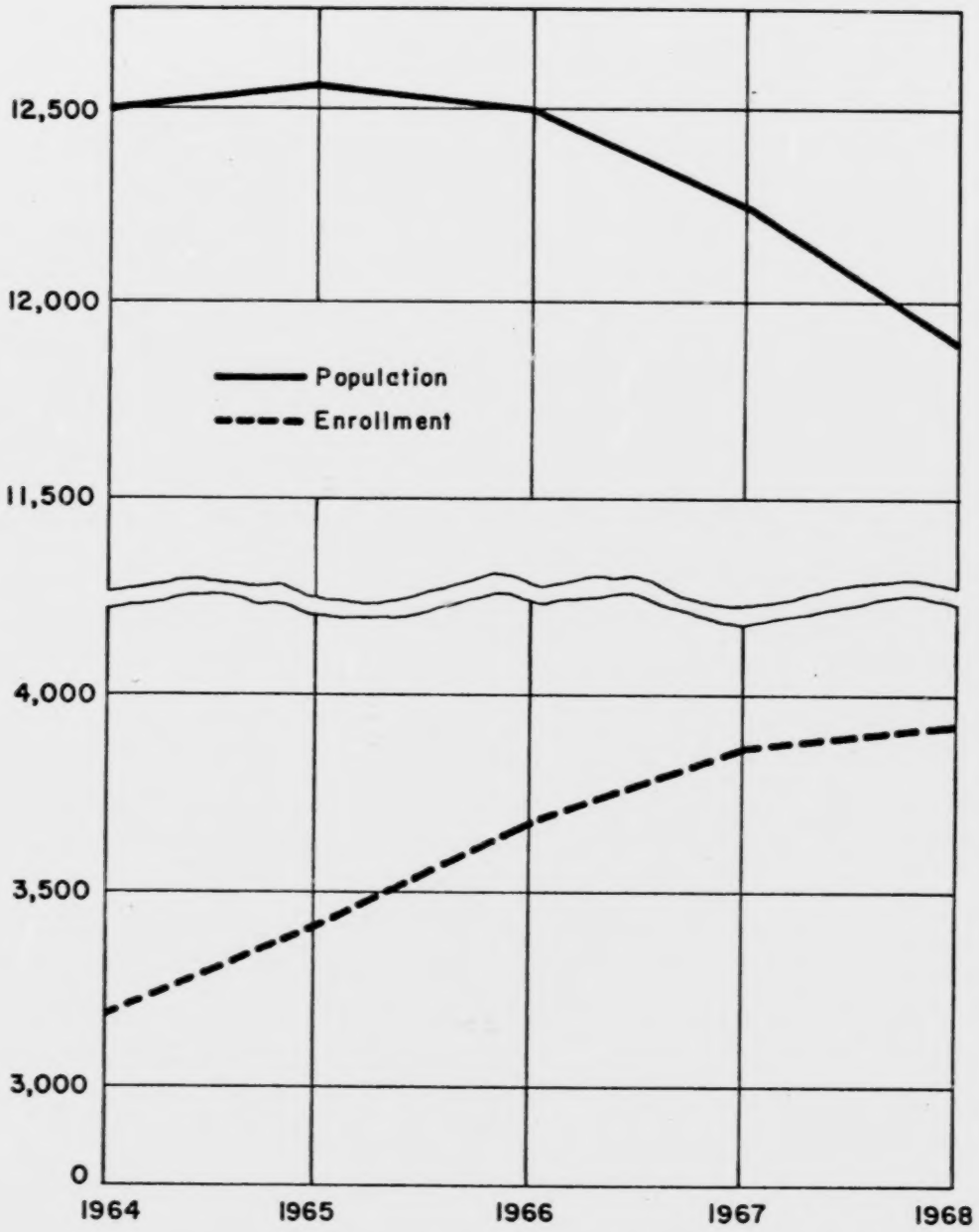
agency."[1] In compiling statistics on pre-primary enrollments for 1970, the definition of pre-school programs was limited as follows: "Institutions which offer essentially custodial care are not included."[2] The primary grades are defined as "...a distinct organization within an elementary school for pupils in the primary grades, usually equivalent to grades 1 through 3."[1] Therefore, pre-primary refers to the level preceding the primary level, or perhaps the earliest instruction or schooling a child may receive.

Daycare, another form of care for pre-school age children, is defined by Lazar and Rosenberg in Day Care: Resources for Decision as follows:

> "...Day Care refers to any public or privately sponsored program, which provides for the care of pre-school or school-age children (when not in school) by someone other than adult members of the child's own family, in whatever setting it takes place, whether in an institution, Family Day Care arrangement, foster care, Day Care center, etc...."[3]

The definitions outline another feature of early childhood care: not every formally-organized program will have an educational component. It is estimated for 1970 that formal private and public pre-school educational programs attracted about one-third of the eligible population (pre-schoolers ages 3-5) approximately 11 million, or 4.1 million.[2] Estimates indicate a 1969 enrollment of 638,000 in day care centers and family day care homes.[3] It is possible that this figure may overlap with the third of the population enrolled in pre-primary programs during 1970. The conclusion drawn is that many youngsters remain outside the orbit of some organized activity, and that any pre-school education delivered to them en masse will have to be for the large, but dispersed, home audience. Fortunately, almost all U.S. homes have television sets.

Although Early Childhood Education is currently experiencing growth in both participants and public interest, the eligible population for this service is declining. The total number of Americans under 5 years of age was 17,184,000 in 1970, down from the 1960 tally of 20,337,000.[4] Figure 1 illustrates the counter tendencies of population and enrollment: namely, that the population of 3 to 5 year olds has declined by approximately one-half million between 1965 and 1968 while enrollment in pre-primary programs rose by the same approximate amount during that time span.[1] This state of affairs may be explained by the confluence of three factors. The first



Source: Preprimary Enrollment Trends of Children Under Six, National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C. (1970)

FIGURE 1

PREPRIMARY ENROLLMENT AND POPULATION OF CHILDREN 3 TO 5 YEARS OLD: UNITED STATES, 1964-1968.

is the increasing attention within educational ranks to theories advancing the notion that education within the first six years is instrumental not only for instilling acceptable socialization patterns, but also for establishing the necessary cognitive base for subsequent school success. Whether the basis for early childhood education becomes one of developing necessary social skills or laying the groundwork for later cognitive learning (i.e., problem solving, language facility) is currently a matter of discussion. However, theories emphasizing the early formative years as crucial for subsequent education, and the research surrounding these theories, are attracting wide-ranging attention.

The second factor aiding the intensification of interest in early childhood education is the federal attention and funding for it. Beginning with Project Head Start, a War on Poverty effort of the mid-'60's, and expanded with the creation of Project Follow Through, national interest in the formative years has been backed by national funding. Project Head Start is based upon the notion of preventing educational difficulties often exhibited by disadvantaged children by providing them with pre-school educational opportunities. Implemented locally throughout the nation, Head Start is a center-based program. Follow Through is the sequel program to Head Start. Piloted in 1967, Follow Through provides comprehensive supplemental help to disadvantaged children in the primary grades. One-half of the participants in Follow Through are expected to be alumni of full-day pre-primary preparatory programs. FY 1970 funds of approximately $57 million sponsored 155 projects around the nation serving 60,000 children. The implementation of Project Head Start is widely credited with giving the importance of early childhood education an eminent visibility.

The final factor combining to promote the importance of early childhood education is of more recent vintage. Events have drawn national attention to the presence of women in the labor force, and the concommitant issue of accessibility; how easy is it for a woman to enter, and remain in, the labor force. If the woman has children, their care during her working hours becomes of cardinal importance. If her children are still too young for formal schooling, their placement while she is at work demands paramount consideration. The availability and quality of care for young children of working mothers, or mothers interested in working, then becomes a related matter to the broader issue of women in the labor force.

This memorandum, with its ultimate objective of assessing the potential of large-scale electronic delivery of early childhood education, will begin by examining the current status of pre-school education. Chapter Two focuses upon that portion of the audience served by formal educational programs, or enrollment in pre-primary programs. After defining what portion of the total eligible population is served in this manner, attention is given to demographic factors distinguishing pre-primary enrollments. The last section of Chapter Two analyzes the type of setting for such programs in which the host institution can be publicly or privately controlled.

Chapter Three examines alternative approaches to pre-school care and/or education. Foremost among these is Daycare. Attention is also given to the broad range of pre-primary programs in an attempt to illustrate the array of delivery mechanisms currently in use.

Chapter Four presents efforts now underway to deliver early childhood education via electronic technology. Initial attention is given to preconditions for large-scale technological delivery of pre-school educational services. The chapter then details electronic programming now underway or being planned to reach pre-school age youngsters, their parents, and teachers.

Chapter Five summarizes the alternatives for providing early childhood education and/or care and presents the per pupil cost associated with each option. A cost continuum is given for the variety of alternatives.

Chapter Six examines the related consideration of responsibility for early childhood education and/or care. Does responsibility rest only with the parent or should government, at some level, provide help? What are the financial commitments of providing early childhood services, and how do they effect future plans? These questions framing the public debate become an issue surrounding early childhood education. It is within this context that large-scale technological delivery of pre-school educational services must be assessed.

The final chapter of this memorandum, Chapter Seven, continues this theme with the presentation of conclusions regarding the suitability of early childhood education for large-scale electronic delivery. Recommendations regarding the appropriateness of the various media are also included.

2. CURRENT STATUS OF EARLY CHILDHOOD EDUCATION

2.1 The Eligible Population and Numbers Currently Served by Pre-Primary Programs.

The federal government began collecting statistics on pre-primary enrollments in 1964. The population surveyed is defined as "...the non-institutional population 3 to 5 years old in the 50 states and the District of Columbia."[1] This definition has remained consistent for subsequent publications on the topic, the most recent covering the 1970 school year. The 1969 and 1970 editions have some data including 6 year-olds. This refinement highlights a problem in defining the population; states vary in the availability of pre-primary programs and the mandatory entrance age for school.

In 1970, there were 4.1 million pre-schoolers enrolled in pre-primary educational programs, out of a total population of 10.9 million in the age range 3 to 5 years-old.[2] The declining population figures for this age group* and the increasing pre-primary enrollment figures, beginning with 1964, have previously been documented (Figure 1). In percentage terms, 33% of the eligible population was enrolled in pre-primary programs during 1968,[1] 34.6% in 1969,[5] and 37.5% by 1970.[2] Enrollment growth in pre-primary programs has been incremental but steady.

Enrollment demographics indicate that participation increases largely stem from 3 to 4 year-olds, particularly nonwhites in those age categories. In 1970, the North Central states** lead with a pre-primary enrollment of 1,161,000.[2] However, the South** had the largest eligible population; 3,456,000 youngsters in 1970, of whom 28.3% or 980,000 were enrolled in pre-primary programs.[2] 231,000 of the enrollees were black, giving that region the highest black enrollment. Over one-half of American blacks aged 3 to 5 reside in the South.

Using the Census Bureau classification of "Metropolitan, central," "Metropolitan, other," and "Nonmetropolitan," three trends may be noted:

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*U.S. Department of Commerce Census Bureau projections for the under-5 population range from 21 million to 18.8 million by 1975, using varying assumptions for the fertility rate. The projected population range for 1980: 27 million to 20.5 million; for 1990; 30 million to 20.8 million. If one assumes the lowest-fertility projections, the under-5 population will grow--at a small rate. The high-fertility projections indicate greater total growth for this sub-group, largely occurring between 1975 and 1980.[4]

**A listing of states within these regions is given in Section 2.1.3.1

1) greater numbers of pre-primary enrollees are from both metropolitan categories than from a non-metropolitan locale, 2) there are greater concentrations of eligible population in both the "Nonmetropolitan" and "Metropolitan, other" categories than in the central city, and 3) most of the eligible non-white population is found in the "Metropolitan, central" area. All three categories have shown incremental pre-primary enrollment growth, but the enrollment differential between metropolitan and nonmetropolitan areas has been maintained.

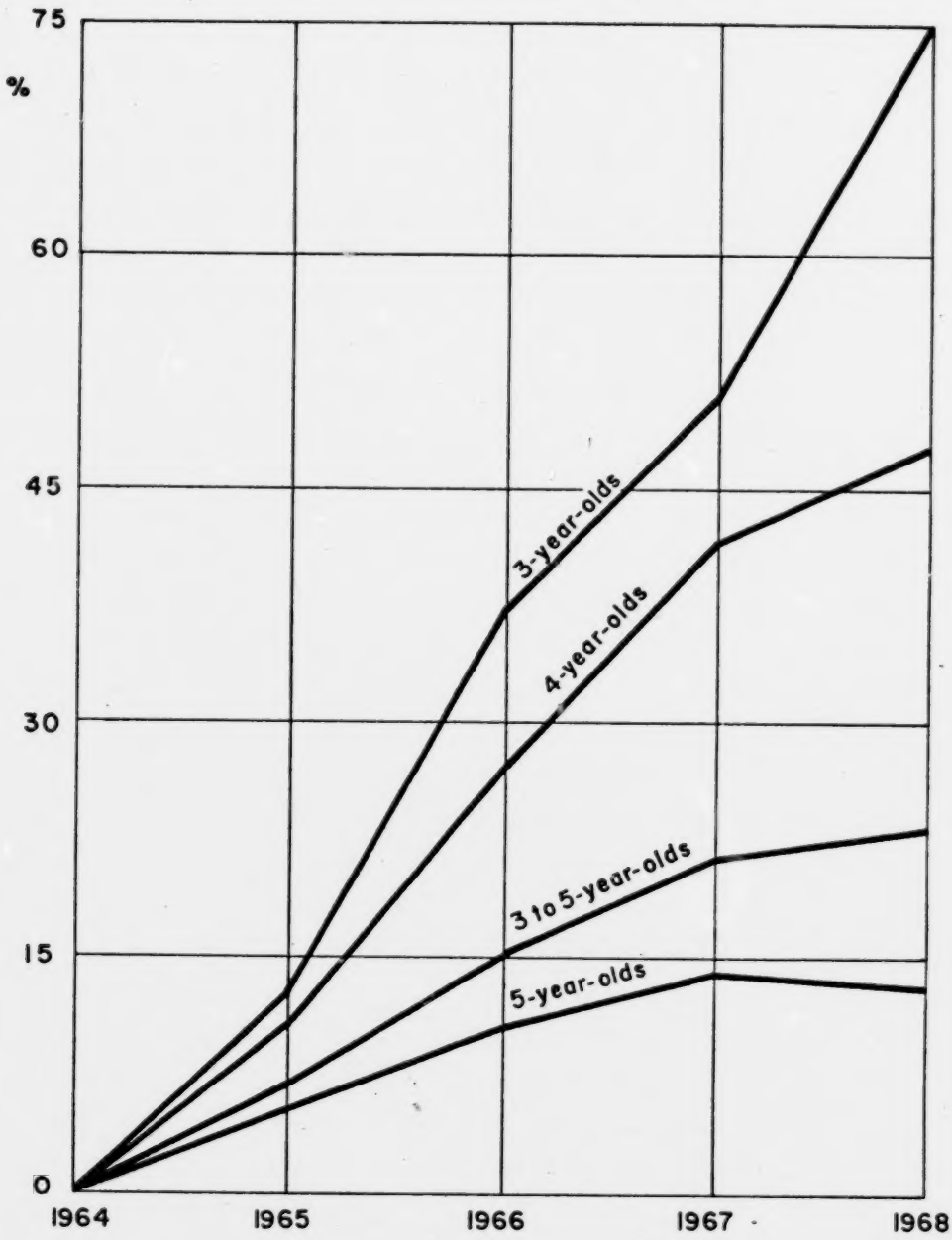
Most pre-primary enrollment (excluding kindergarten) is centered in privately-controlled institutions, although pre-school programs of public institutions are attracting larger numbers, particularly of the non-white population. When considering registration figures for 5 year-olds, the situation reverses itself. At age 5 there are increased enrollments of all races in publicly-supported institutions, very likely due to the availability of kindergarten classes for that age group.

2.1.1 Pre-Primary Enrollment by Age Group

Analyzing the gross statistics in terms of age, one notes that there are consistently more 5 year-olds enrolled in pre-primary programs than either 3 year-olds or 4 year-olds. This may be explained by the prevalence of kindergarten programs for 5 year-olds. What is interesting is the rapid enrollment growth among 3 and 4 year-olds, or those traditionally too young for kindergarten programs.

Figure 2 indicates the percentage increase in pre-primary enrollment for each age group for the 4-year span between 1964 and 1968. Three year-olds have registered the greatest increase, jumping 75.1% from 181,000 to 317,000 enrolled.[1] Four year-old enrollees rose by 47.6%, from 617,000 to 911,000.[1] Figure 2 indicates that 5 year-olds peaked in 1967; although the total number of 5 year-old enrollees decreased between 1967 and 1968, that group registered a 13.1% increase during the total time span.[1] The base figures for 5 year-olds are much larger, as shown by a numerical increase from 2,389,000 to 2,701,000.[1]

Viewed from the perspective of percentage enrolled per age group, between 1964 and 1968 the percentage of 3 year-olds enrolled in pre-primary programs rose from 4.3% to 8.3%, the percentage of 4 year-olds enrolled rose from 14.9% to 22.8%, and the percentage of eligible 5 year-olds



Source: Preprimary Enrollment Trends of Children Under Six, National Center for Educational Statistics, Office of Education, U.S. Dept. of Health, Education and Welfare, Washington, D.C. (1970).

FIGURE 2

CUMULATIVE PERCENTAGE INCREASE OF CHILDREN 3 TO 5 YEARS OLD ENROLLED IN PREPREIMARY PROGRAMS, BY AGE: UNITED STATES, 1964-1968.

enrolled rose from 58.1% to 66.0%.[1] Comparable statistics for the 1969-1970 period indicate continued increases in both percent of total subgroup population enrolled and percentage increase in pre-primary enrollment. As illustrated by Figure 3, percentage enrolled within each age category rose, but the percentage increases were greatest for the 3 and 4 year-olds (4.2% and 4.7%, respectively) than for 5 year-olds (0.4%).[2]

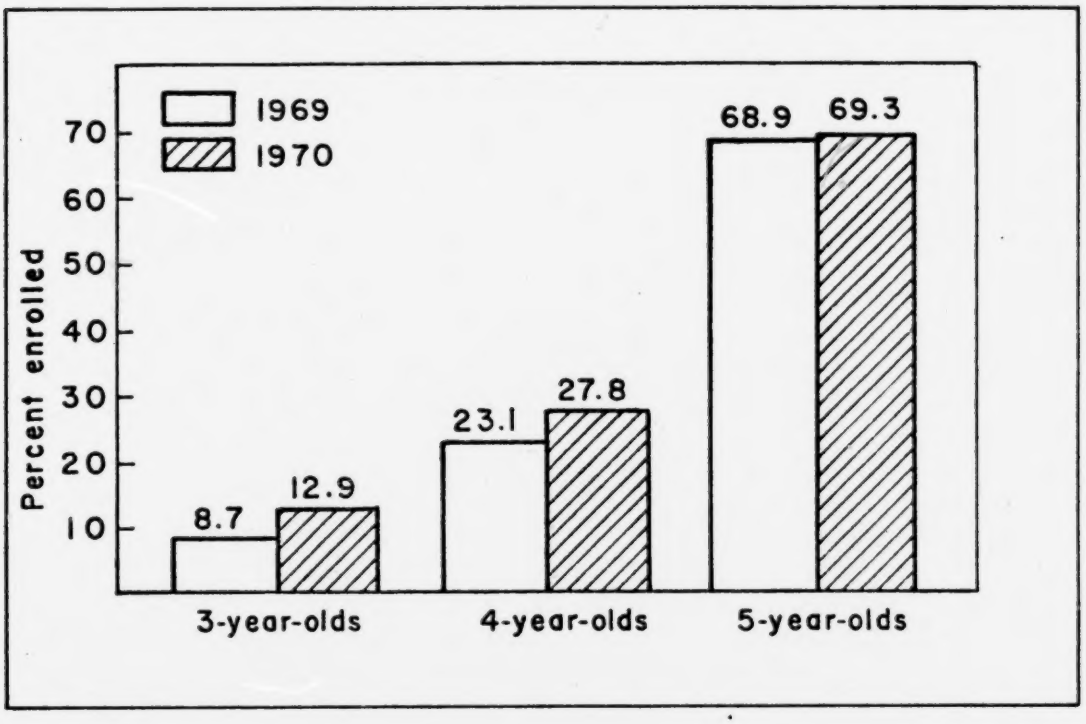
2.1.2 Pre-Primary Enrollment by Race

Available statistics may be analyzed according to the criterion of race. Within the time span that the federal government has been issuing statistics, refinements of this criterion have taken place. Beginning in 1969, the traditional demarcation of "white" and "non white" was further broken down into "white," "other races," and "negro."

Between 1964 and 1968, enrollment of nonwhite 3 to 5 year-olds rose faster than enrollment of white 3 to 5 year-olds (40.5% to 20.5%, respectively). In numerical terms, nonwhite pre-primary enrollment rose from 440,000 to 618,000 while white pre-primary enrollment rose from 2,747,000 to 3,310,000.[1] The result, by 1968, was that the percentage of nonwhites enrolled (31.9 percent) nearly equaled the percentage of whites enrolled (33.2 percent).[1]

However, the big boost to nonwhite enrollment increases during that period was shown to come from the 3 and 4 year-olds. Figure 4 graphically indicates that greater percentages of nonwhites are pre-primary enrollees in both the 3 year-old and 4 year-old categories. The reverse is true for 5 year-old enrollment by race. A possible explanation is that white enrollment swells at the 5 year-old level due to the larger school-age population of whites, and children may often begin attending kindergarten at that age. The National Center for Educational Statistics hypothesizes that the predominance of nonwhites in the 3 and 4 year-old categories is due to the concentration of federal and state pre-primary programs in central city areas where greater proportions of nonwhites and working mothers tend to reside.[1]

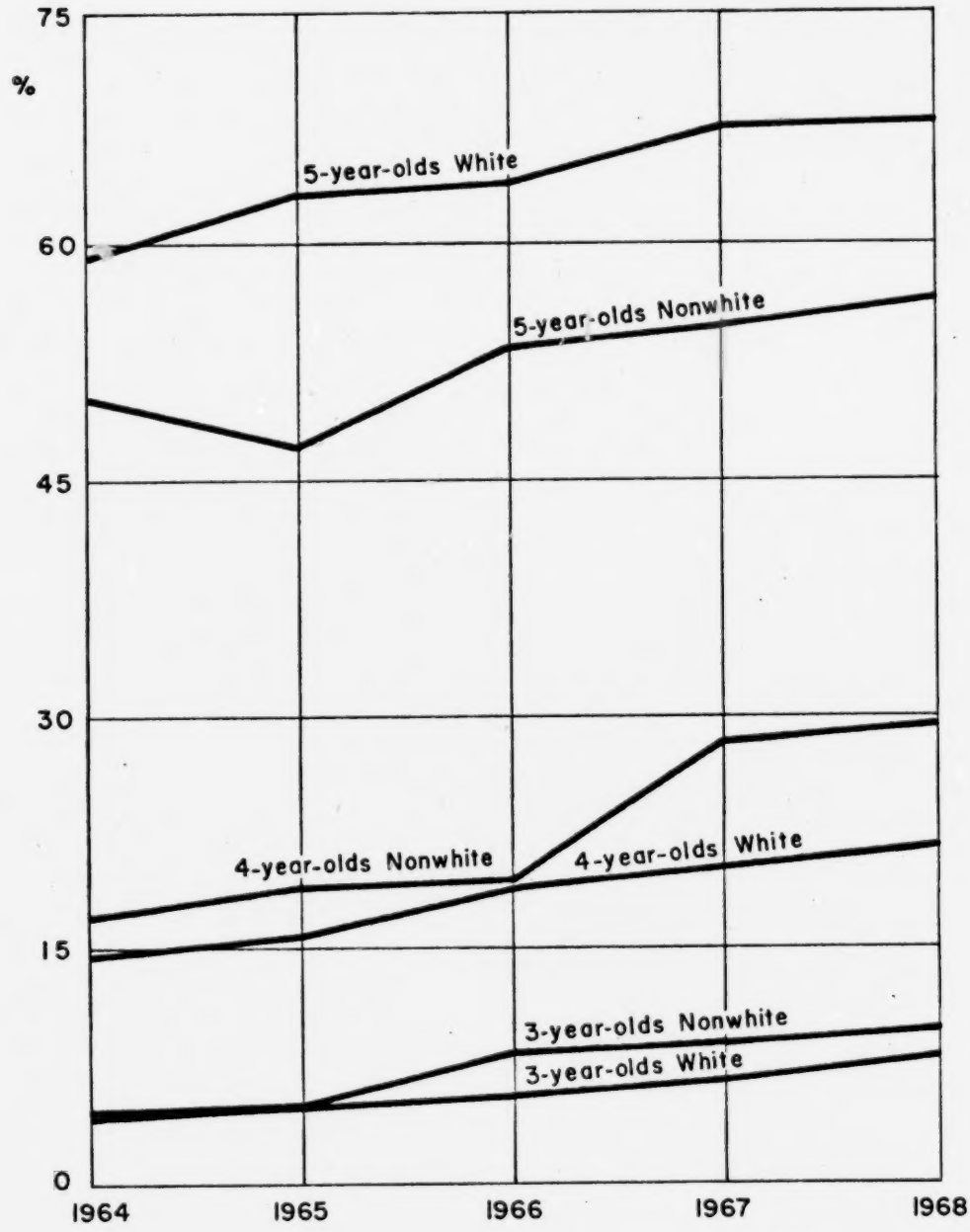
Figures for 1969 and 1970 bear out this trend; pre-primary enrollment for "other races" and "negro" 3 and 4 year-olds runs ahead of that for whites. The figures are:



Source: Preprimary Enrollment, October, 1970, National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C. (1971).

FIGURE 3

PREPRIMARY ENROLLMENT OF CHILDREN 3 TO 5 YEARS OLD, AS PERCENT OF POPULATION, BY AGE: UNITED STATES, OCTOBER 1969 AND OCTOBER 1970.



Source: Preprimary Enrollment Trends of Children Under Six, National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C. (1970).

FIGURE 4

PERCENT OF CHILDREN 3 TO 5 YEARS OLD ENROLLED IN PREPRIMARY PROGRAMS, BY AGE AND COLOR: UNITED STATES, 1964-1968.

Percent of Population Enrolled in Pre-Primary Programs

	3 Year-Olds		4 Year-Olds		5 Year-Olds	
	1969	1970	1969	1970	1969	1970
Other	11.7	14.4	29.7	31.2	57.9	59.9
Negro	11.9	14.4	30.4	30.9	56.8	57.8
White	8.1	12.5	21.8	27.1	71.0	71.2

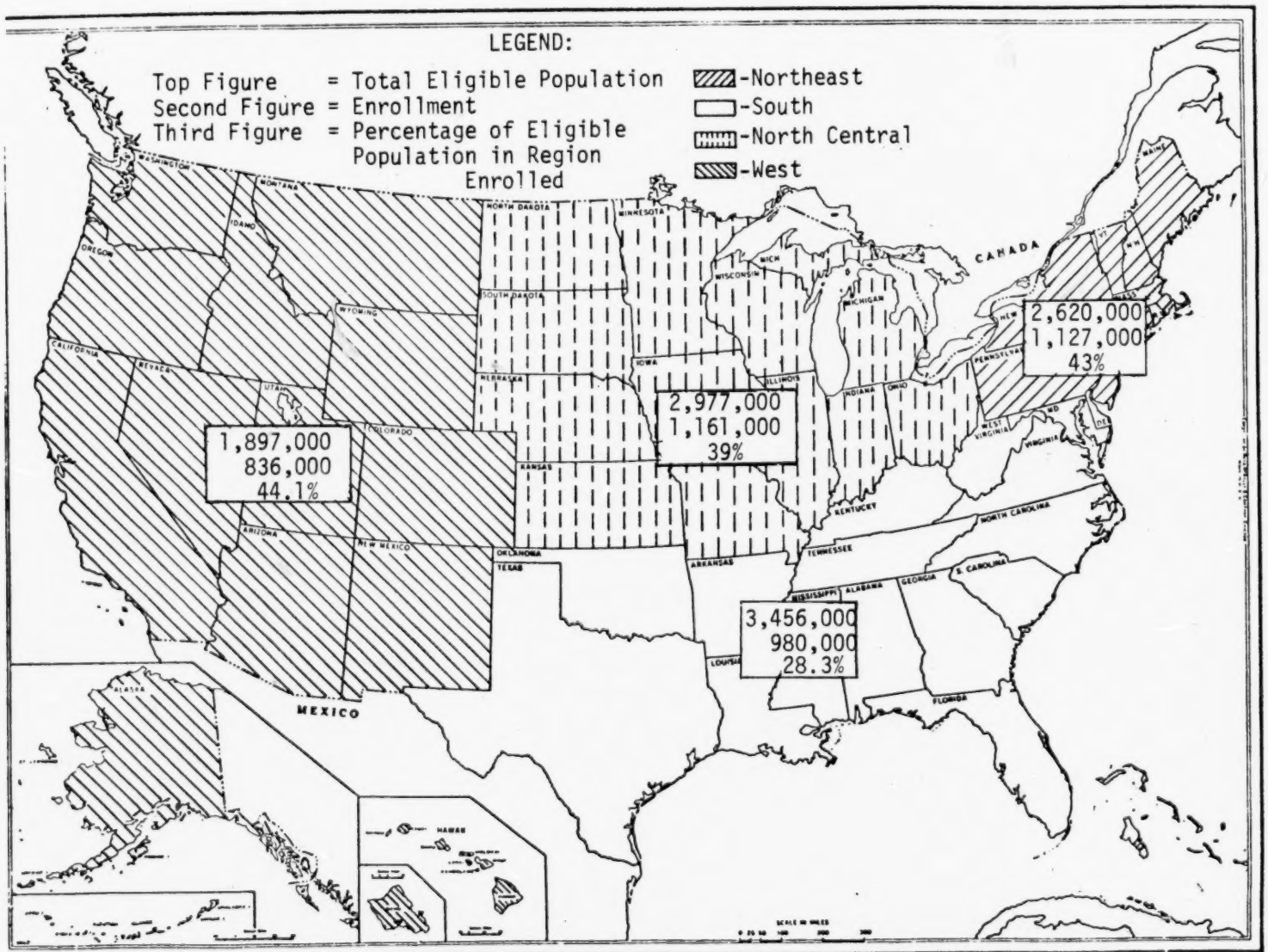
White enrollment predominates at the 5 year-old level, as it does if one looks at the total pre-primary enrollment for children between the ages of 3 and 5 in 1969: total enrollment, 34.6%; white, 34.8%; other, 33.5%; negro, 33.3%.[5] Total pre-primary enrollment for children between the ages of 3 and 5 during 1970: total enrollment, 37.5%; white, 37.8%; other, 35.7%; negro, 34.9%.

2.1.3 Pre-Primary Enrollment by Residence

Residency may be divided into two categories: the first is residency by region, and the second is residency by population concentration.

2.1.3.1 Residency by Region

Figure 5 presents a regional breakdown of 1970 pre-primary enrollment in terms of total population ages 3-5, enrollment figures, and percentage of eligible population of region enrolled. For survey purposes, the U.S. was divided into four geographical regions. The Northeast region includes the states of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The South means in this regional context the states of Alabama, Arkansas, Delaware, the District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. The North Central region indicates the states of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. And the West means the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming, Alaska, and Hawaii.[1]



Source: Preprimary Enrollment, October, 1970, National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C. (1971).

FIGURE 5: PRE-PRIMARY ENROLLMENT BY REGION, 1970

The Western region has maintained the largest percentage of preprimary enrollment throughout the time for which statistics have been collected, rising from 31.6% in 1964, to 44.1% by 1970.[2] Perpetually in second place is the Northeast, although through the years the percentage gap separating it from the West has been narrowed. By 1970, its enrollment percentage had risen to 43%.[2] The North Central region is third in enrollment percentages with 39% in 1970.[2] The South, which enrolled 15.2% in 1964, enrolled 28.3% during 1970. Between 1964-1968 the South had the highest growth rate in percentage enrollment.[1,2]

If one examines the four regions in terms of total numbers of eligible population, the reverse ranking emerges. In 1970, the South had 3,45[illegible],000 children between the ages of 3 and 5. Of the total eligible population, 980,000 were enrolled by 1970.[2] The West had the smallest total eligible population in 1970. The figure is 1,807,000. Of the total 3 to 5 year-old population in 1970, 836,000 eligible children were enrolled.[2]

The region with the second-largest preprimary population is the North Central. Total preprimary population was 2,977,000 in 1970; enrollment is 1,161,000.[2] In third place in terms of concentration of preprimary population is the Northeast. In 1970, the total preprimary population was 2,620,000 with 1,127,000 enrolled.[2]

A regional racial profile may be compiled. In 1970 the South had the largest numerical negro enrollment; 231,000 were enrolled in 1970. The North Central Region enrolled 137,000 black children in 1970.[2] The North Central region slipped from second to third place in negro preprimary enrollments between 1969 and 1970.[2,5]

The Northeast enrolled 153,000 negro children in 1970, thus trading places with the North Central region between 1969 and 1970 in terms of negro enrollments.[2] The West has the smallest negro preprimary population, and the smallest negro preprimary enrollment; in 1970, 65,000 black children were enrolled.[2]

The 1970 survey of preprimary enrollment noted, "Since more than half of all 3 to 5 year-old Negro children were found in the South, the relatively low enrollment rate for this region as a whole resulted in a smaller percent of Negro than of white children enrolled nationwide."[2]

The West recorded the greatest numbers in the category, "other races", registering 212,000 in 1970. The category "other races" includes, "... Indians, Japanese, Chinese, and others."[2] Therefore, the large concentration of "other" pre-primary children recorded in the West may be reflective of that section's Oriental population.

2.1.3.2 Residency by Population Concentration

In addition to region of residence there is another residence-based index. Previously referred to in this paper as residency by population concentration, this index categorizes preprimary populations and enrollments by urban, suburban, or rural location.

Surveys to date have based this index upon "definitions used by the Bureau of the Census in its Current Population Reports series." "Metropolitan-Nonmetropolitan Residence" is defined as follows:

> The population residing in standard metropolitan statistical areas (SMSA's) constitutes the metropolitan population. Except in New England, an SMSA is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county or counties containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, SMSA's consist of towns and cities, rather than counties. The metropolitan population in this report is based on SMSA's as defined in the 1970 Census and does not include any subsequent additions or changes.[2]

Metropolitan residency may be further defined as "Metropolitan, central" or "Metropolitan, other." "Metropolitan, central" corresponds to a central city location, and "Metropolitan, other" corresponds to the metropolitan area surrounding the central city.

"Nonmetropolitan" corresponds to locations outside SMSAs, most probably rural areas.

In general, three trends may be noted. First, greater numbers of preprimary enrollees come from both metropolitan categories than from a nonmetropolitan locale. Second, greater numbers of eligible population are concentrated in both "Nonmetropolitan" and "Metropolitan, other"

locations than in the central city. Finally, most of the eligible non-white population is concentrated in the "Metropolitan, central" area.

Enrollment and population figures by place of residence for 1964 may be summaried as follows: in 1964, enrollment for both metropolitan categories totaled 2,382,000, compared to a nonmetropolitan enrollment of 806,000. Enrollment percentages were 29.1% for "Metropolitan, central," 29.7% for "Metropolitan,other," and 18.3% for "Nonmetropolitan."[1] Combined metropolitan enrollment for 1970 was 2,923,000, while nonmetropolitan enrollment stood at 1,181,000. Enrollment percentages were 39.4% "Metropolitan, central," 43.2% "Metropolitan, other," and 30.2% "Nonmetropolitan."[2]

The preceding figures illustrate enrollment growth, both in numbers and percentages of eligible population, for all three locations. All three categories have not experienced a pronounced increase in one particular year, so growth has been incremental. However, the enrollment differential between metropolitan and nonmetropolitan areas has been maintained.

Although greater numbers of preprimary enrollees come from metropolitan areas, more of the eligible population is concentrated "Nonmetropolitan" and "Metropolitan, other" settings. For 1964, total eligible population was greater, both individually and collectively, in "Nonmetropolitan" and "Metropolitan, other" areas than in the "Metropolitan, central" setting.[1] In 1970, the situation remains the same. There was an eligible population of 3,949,000 in a "Metropolitan, other" setting, and an eligible population of 3,913,000 in a "Nonmetropolitan" location. "Metropolitan, central" recorded an eligible population of 3,088,000 for 1970. (See Table I, Appendix A) Therefore, enrollment concentration is within metropolitan areas, while the greatest numbers of total eligible population are in suburban and rural areas.[2]

However, the majority of the non-white eligible population is located within the "Metropolitan, central" areas. In 1970 preprimary population figures as shown in Table I (Appendix A) are: "Metropolitan, central" had 2,101,000 white 3 to 5 year-olds, 929,000 negro youngsters, and 58,000 children of other races for a total non-white population of 987,000. "Metropolitan, other" had a white preprimary population of 3,643,000, a negro

preprimary population of 256,000 and a 50,000 population of other non-whites for a total non-white population of 306,000; "Nonmetropolitan" areas had a white population of 3,354,000, a negro preprimary population of 495,000, and a 63,000 population of other non-whites for a total non-white population of 558,000.

There is an additional refinement to the residency-by-population-concentration profile. Beginning in 1969, the National Center for Educational Statistics began collecting data on those preprimary enrollees living in SMSAs of more than 250,000, and on those living in designated poverty areas. In 1970, the NCES added attendance data -- part-day or full-day. The composite picture is of the urban poor and their attendance habits in comparison to the rest of the nation.

In 1970, 56% of the eligible preprimary population was located in SMSAs greater than 250,000. Enrollment percentages were higher in urban nonpoverty areas than in urban poverty areas regardless of race. Part-day attendance is more prevalent in urban areas, both poverty and non-poverty sectors, regardless of the student's race. However, a greater percentage of negro children and children from other minority groups attended part-day sessions in poverty areas. Enrollment within urban areas greater than 250,000 was a greater percentage than within the rest of the nation (42.4% to 31.2%). Percentage enrollment within urban poverty areas exceeded that for the remainder of the nation.[2]

2.2 The School Setting by Type of Control

A major distinction that may be made among institutions delivering pre-primary educational services is one of control; is the institution publicly-supported or privately-financed? What type of institution attracts most of the enrollment?

Data falls into two categories: the first grouping is of total pre-primary enrollment, or enrollment in an educational activity prior to Grade 1, and the second grouping is specific to kindergarten enrollment.

Most pre-primary enrollment is centered in privately-controlled institutions, although pre-school programs of public institutions are attracting larger numbers, particularly of the non-white population.

Between 1964 and 1968, public pre-school attendance increased from 91,000 to 262,000 while nonpublic pre-school attendance increased from 380,000 to 554,000. Public pre-school enrollment increased 187.9%; nonpublic pre-school enrollment increased 45.8%.[1] Figure 6 illustrates the findings for 1970; greater 3 and 4 year-old preprimary enrollments in private institutions although most of the nonwhite 3 and 4 year-old attendance is concentrated in public institutions. There is a registration reversal at age 5, with increased enrollments of all races in publicly-supported institutions.[2]

More significant is the precentage of total eligible population enrolled in some form of pre-primary program. Statistics are available for 1969 and 1970. 34.6% of the total population between 3 and 5 years old was enrolled in pre-primary programs in 1969.[5] Thus, approximately one-third of the total population was involved in some form of pre-school educational activity. In 1970, 37.5% of the total eligible population was enrolled, an excess of one-third of the total population.[2]

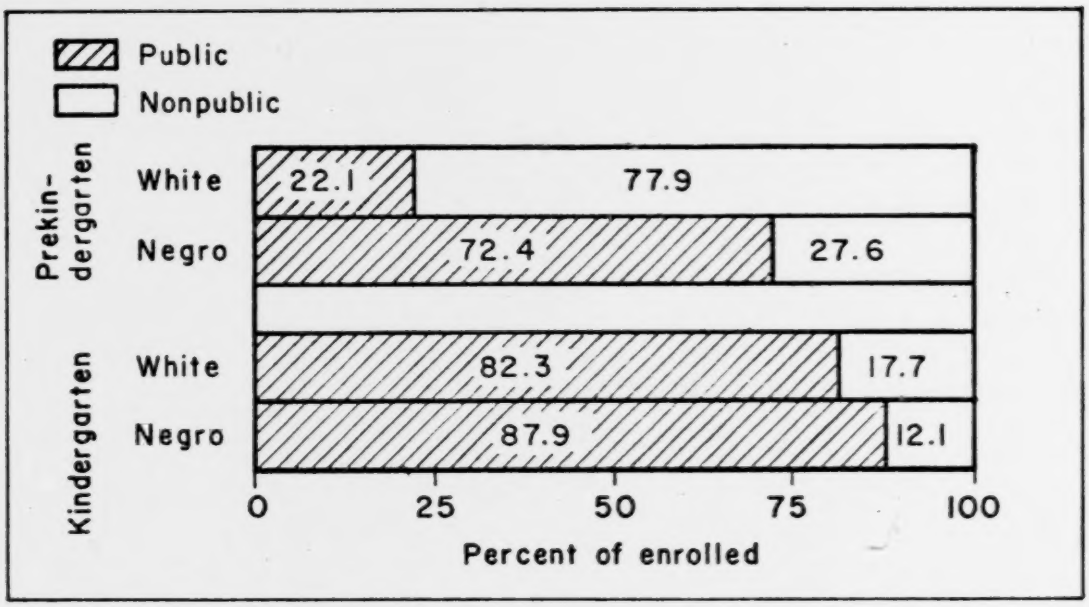
Thus, formalized private and public preschool programs are attracting around one-third of the eligible audience of 10.9 million 3 to 5 year-olds in 1970. In addition to the total population being diverse, it is also dispersed among a variety of settings.

3. ALTERNATIVE APPROACHES TO EARLY CHILDHOOD EDUCATION

3.1 Day Care

An encompassing term for the total variety of child-care settings may be roughly classified under the banner "Day care." This term, which was defined in Chapter 1, encompasses the following aspects: 1) control may be either public or private, 2) it is a program for child care, whether the child is of school age or pre-school age, by adults not related to the child, and 3) the setting is variable, perhaps in a institution or home, to name only two options.[5] Day care usually connotes child care arrangements made by a working mother rather than a program for enrichment purposes in which a mother enrolls her child.

The most frequent arrangements (for children under 6) is for a relative or non-relative to provide care in the child's own home. The



Source: Preprimary Enrollment, October, 1970, National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C. (1971)

FIGURE 6

PERCENT DISTRIBUTION OF PREPRIMARY ENROLLMENT OF CHILDREN 3 TO 5 YEARS OLD, BY LEVEL AND BY RACE AND CONTROL: UNITED STATES, OCTOBER, 1970.

prevalence of this arrangement remained essentially stable between 1965 and 1970, rising from 48% of all child-care arrangements in 1965 to 49.9% by 1970. The second most common arrangement was for care to be provided in another home. The frequency of this child-care arrangement rose from 30.7% in 1965 to 34.5% in 1970. Usually in these circumstances care is provided by a non-relative, a tendency which increased during the 5-year span. Two other options for child-care remain: enrollment in a day care center, or for no special care arrangements to be made at all. Whereas in 1965, 15.7% of the total represented no special care arrangements, by 1970 this percentage dropped to 5%. Concurrently, there was a rise in day care center enrollments from 5.6% to 10.5%.[27]

The shift in child-care patterns seems to have resulted from a sharp drop in lack of arrangements. Previously uncared for children seem now to be enrolled in day care centers, with a lesser number now cared for in other people's homes. Both day care center attendance and care in another's home may be subsidized, yet both alternatives may involve a cost to the parent. Preferences in child-care arrangements are based on factors other than costs. A study for the Massachusetts Advisory Council on Education found that closeness to the child's own residence is of great importance. 58% of the parents polled favored care next door (even if they had to pay $15 a week) over free care one-half hour away.[28] Surveys have revealed that convenience to home and attention to social growth opportunities and the child's well-being are usually rated over educational opportunities by parents in selecting a child-care program.[6] The Westinghouse/Westat survey noted that parents favoring day care centers placed a higher priority on educational opportunities.[27]

Day care may provide a wide variety of programs; hopefully it is more than custodial in nature. With any phenonenon so diverse, it is difficult to generalize, but Lazar and Rosenberg outline three types of facilities commonly involved in Day Care: 1) a Family Day Care Home, 2) a Group Day Care Home, and 3) a Day Care Center. The second facility, Group Day Care Home, is usually involved with schoolage children and so is outside the range of this study.[3]

3.1.1 The Family Day Care Home

The first type of facility, the Family Day Care Home, is concerned with the care of preschool-age children in a home environment. In this situation a mother uses her own home as the Day Care facility, becoming directress, staff member, and mother-figure herself. Lazar and Rosenberg comment that this arrangement is most suitable for neighborhood-based programs for small children. Federal requirements are such that a maximum of six children per Family Day Care Home are allowed, including the housemother's own children. Although Lazar and Rosenberg do not specifically comment upon the informality, convenience, and flexibility that surely must accompany a Family Day Care arrangement, those appealing qualities could possibly make this the most difficult arrangement to quantify and regulate.

Table II gives a state-by-state account of licensed Family Day Care Homes as of 1969. The total number of these homes, and their capacities, are noted and broken down in three ways for each state: 1) those homes that are publicly-supported, 2) those homes that are operated on a voluntary basis (perhaps by a service group to provide for a community need), and 3) those homes that are independent, i.e., independent of public funds and private contributions, hence proprietary in nature. Usually, the majority of the Family Day Care Homes are independent within each state, a notable exception being New York where most of the homes are in the public sector. The general pattern is that only a small portion of total capacity is provided by voluntary homes. The total number of 32,700 licensed Family Day Care Homes nationwide handled 120,000 per-school-age children during 1969.[3] Two addenda to this statistic should be noted: 1) only a small percentage of family day care homes are licensed; thus, this total may only represent only a fraction of the children cared for in this fashion, and 2) preliminary figures for 1970 (informal at this point) indicate 40,700 licensed family day care homes accomodating 147,000 children.* It may be hypothesized that

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* Bureau of Labor Statistics figure as reported in personal communication to Kate Rogers of the National Program of Early Childhood Education on March 6, 1972.

TABLE II

LICENSED OR APPROVED FAMILY DAY CARE HOMES, BY AUSPICES AND CAPACITY, BY STATE, MARCH 1969 (provisional)

STATE	Family Day Care Homes							
	Total		Public		Voluntary		Independent	
	Number	Capacity	Number	Capacity	Number	Capacity	Number	Capacity
	2/32,700	120,000	2,500	8,000	550	2,100	27,700	102,000
Alabama	275	1,421	--	--	--	--	275	1,421
Alaska	60	158	--	--	--	--	60	158
Arizona	317	714	--	--	--	--	317	714
Arkansas	218	927	--	--	--	--	218	927
California	9,965	38,530	--	--	--	--	9,965	38,530
Connecticut	819	2,946	8	30	--	--	811	2,916
Delaware	607	1,696	--	--	29	84	578	1,612
District of Columbia	264	651	91	228	53	123	120	300
Florida	163	734	--	--	--	--	163	734
Georgia	108	648	50	300	--	--	58	348
Hawaii	121	526	--	--	--	--	121	526
Idaho	102	273	--	--	--	--	102	273
Illinois	1,946	6,069	262	535	20	43	1,664	5,491
Indiana	905	3,968	4/	4/	4/	4/	4/	4/
Iowa	619	2,334	73	214	3	11	543	2,109
Kansas	898	3,488	--	--	--	--	898	3,488
Kentucky	15	90	--	--	--	--	15	90
Louisiana	288	1,152	288	1,152	--	--	--	--
Maine	35	199	--	--	--	--	35	199
Maryland	813	2,945	173	618	--	--	640	2,327
Massachusetts	--	--	--	--	--	--	--	--
Michigan	1,857	5,709	1	1	8	18	1,848	5,690
Minnesota	1,865	5,717	--	--	--	--	1,865	5,717
Mississippi	4	17	4	17	--	--	--	--
Missouri	209	1,045	80	400	--	--	129	645
Montana	141	542	--	--	--	--	141	542
Nebraska	107	621	--	--	--	--	107	621
Nevada	215	870	--	--	--	--	215	870
New Hampshire	257	923	--	--	--	--	257	923

TABLE II (continued)

State	Total		Public		Voluntary		Independent	
	Number	Capacity	Number	Capacity	Number	Capacity	Number	Capacity
New Jersey	131	295	131	295	--	--	--	--
New Mexico	5/ 37	5/ 92	37	92	--	--	4/	4/
New York	132	4,183	1,093	3,340	125	346	103	497
North Carolina	34	183	--	--	2	11	32	172
North Dakota	19	51	--	--	--	--	19	51
Ohio	63	197	63	197	--	--	--	--
Oklahoma	178	640	111	305	--	--	67	335
Oregon	6	31	--	--	1	5	5	26
Pennsylvania	917	3,387	--	--	4/	4/	4/	4/
Puerto Rico	110	601	--	--	--	--	110	601
Rhode Island	70	235	20	49	3	10	47	176
South Carolina	148	1,752	--	--	--	--	148	1,757
South Dakota	26	75	--	--	--	--	26	75
Tennessee	147	11	4/	4/	4/	4/	4/	4/
Texas	1,218	5,777	--	--	307	1,451	911	4,326
Utah	267	842	--	--	--	--	267	842
Vermont	29	246	--	--	--	--	29	246
Virgin Islands	1	6	--	--	1	6	--	--
Virginia	546	1,765	--	--	--	--	546	1,965
Washington	4,042	13,526	--	--	--	--	4,042	13,526
West Virginia	30	89	30	89	--	--	--	--
Wisconsin	--	--	--	--	--	--	--	--
Wyoming	71	104	--	--	--	--	71	104

2/ Total includes 2,000 homes with a capacity of 8,400 children which were not reported by auspices.
4/ Not reported
5/ Incomplete

Source: Irving Lazar and Mae E. Rosenberg, "Day Care in America," in Day Care: Resources for Decision, National Center for Educational Communication, Office of Education, U.S. Department of Health, Education, and Welfare (reprint).

since the clientele of Family Day Care Homes may be less than 3 years of age, the statistics presented in Table II may account for additional child-care arrangements than those previously presented from Preprimary Enrollment, October, 1969, which concerned itself with 3 to 5 year-old enrollment figures.

Family day care homes service more infants and toddlers than do any care centers. The clientele is drawn from a lower-income group than those who frequent proprietary centers. Since family day care homes charge approximately $2.00 per week less than proprietary centers (averaging $16.50 per week), this would make sense. However, family day care homes are more costly than non-profit care facilities. Facilities provided by the "typical" family day care home include a one-family residence, outdoor play area, and family atmosphere; usually there are only two children in addition to the caretaker's own family. However, a survey conducted by a National Council of Jewish Women found that most women conducting family day care homes considered themselves babysitters rather than teachers. The survey found that most of the women genuinely enjoyed their charges; however, they were trained neither by background nor inclination to assume an educative role.[29]

Although most family day care homes are informal arrangements among neighbors, some are licensed. The percentage of licensed family day care homes is small, perhaps 5 to 10%. Welfare agencies subsidizing child-care arrangements will only pay for care in licensed family day care homes. Indications are that the differences between licensed and unlicensed family day care homes are size (licensed ones tend to be larger) and economic status of the clientele (children in licensed homes tend to come from a lower-income group than do children in unlicensed homes).[6]

3.1.2 The Day Care Center

The other type of child-care arrangement of interest when considering pre-school children is the day care center. This kind of center is devoted exclusively to the care of pre-school age children. As such, it may accomodate larger groups of children than an in-home service. Lazar and Rosenberg[3] note that the day care center is usually used by children 2 years of age and older.

Table III presents state-by-state data on licensed or approved day care centers as of 1969, using the same categories of control to classify data as Table II. The statistics on day care centers indicate a smaller total number of centers than family day care homes, but a larger capacity for centers. The 518,000 child capacity of the 13,600 day care centers nationwide may be reflective of increasing participation in group programs by 3 to 5 year-olds, as recorded in Preprimary Enrollment, October, 1969. Referring to Table III, and the 1969 figures, most of the day care center capacity is provided by Voluntary and Independent Centers; in this instance, the load is more evenly distributed between those two possibilities. California leads in providing public facilities (since recorded data from New York is incomplete), while Texas -- with its sizeable population -- fails to provide any public day care centers.

Preliminary Bureau of Labor Statistics figures for 1970 indicate 16,700 centers with a capacity of 626,000 children.* The Westinghouse/Westat survey reported 17,500 centers providing a minimum of 7 children full-day services during the year. 60% of the centers were proprietary; the remaining 40% were non-profit, mostly run by volunteer groups.[27] Either total represents an increase in the number of centers over the previous year. Although the Department of Health, Education, and Welfare figures that provide the basis for Table III indicate that independently-controlled centers (proprietary) had somewhat less than 60% of the market in 1969, the Westinghouse/Westat survey for 1970 awarded a 60% share to proprietary centers.[6] The difference may be the result of semantics (how day care center was defined in each study), or the findings may be viewed as sufficiently similar.

Both the Westinghouse/Westat and National Council of Jewish Women surveys noticed the kind of program provided by day care centers. Both surveys arrived at a similar finding: a small percentage of the poor receive subsidized day care that offers more services, hence is more costly, than day care paid for by the non-poor.[27,29] Other joint findings are: 1) most day care centers are not run with high operating budgets, largely because salaries need not be high for relatively untrained staffs, and 2) day care centers are not uniform; there is diversity

* Bureau of Labor Statistics figure as reported to Kate Rogers of the National Program of Early Childhood Education in personal communication on March 6, 1972.

TABLE III

LICENSED OR APPROVED DAY CARE CENTERS, BY AUSPICES AND CAPACITY, BY STATE, MARCH 1969 (provisional)

STATE	DAY CARE CENTERS							
	Total		Public		Voluntary		Independent	
	Number	Capacity	Number	Capacity	Number	Capacity	Number	Capacity
United States estimated total 1/	13,600	518,000	730	34,700	4,100	178,000	7,600	266,000
Alabama	237	9,721	71	3,200	50	2,172	116	1,421
Alaska	14	427	--	--	5	152	9	275
Arizona	342	15,600	--	--	136	6,200	206	9,400
Arkansas	98	3,642	51	1,808	27	1,158	20	676
California	2,220	97,050	336	19,200	918	37,730	966	40,120
Connecticut	366	9,683	8	280	192	5,427	166	3,976
Delaware	59	2,386	--	--	31	1,498	28	888
District of Columbia	154	5,628	--	--	22	812	132	5,216
Florida	365	21,313	--	--	102	7,058	263	14,255
Georgia	677	27,438	--	--	161	7,923	516	19,515
Hawaii	147	7,654	--	--	88	4,468	59	3,177
Idaho	18	563	--	--	--	--	18	563
Illinois	414	16,963	15	835	150	6,922	249	9,206
Indiana	59	2,445	1	75	37	1,701	21	669
Iowa	98	3,180	23	1,082	29	847	46	1,241
Kansas	128	2,784	6	160	37	1,197	85	1,427
Kentucky	305	7,466	--	--	100	876	--	--
Louisiana	220	6,717	6	194	54	2,484	160	4,039
Maine	21	990	--	--	10	611	11	379
Maryland	763	29,591	10	434	1	33	752	29,124
Massachusetts	123	3,920	--	--	44	1,759	79	2,161
Michigan	365	18,423	1	30	217	11,005	147	7,388
Minnesota	61	1,857	--	--	--	--	61	1,857
Mississippi	7	202	2	50	--	--	5	152
Missouri	270	10,371	2	90	97	3,783	171	6,498
Montana	24	787	--	--	--	--	24	787

TABLE III (continued)

STATE	Total		Public		Voluntary		Independent	
	Number	Capacity	Number	Capacity	Numbe	Capacity	Number	Capacity
Nebraska	36	987	6	150	8	230	22	607
Nevada	44	2,016	2	152	2	300	40	1,564
New Hampshire	134	3,917	--	105	132	3,812	--	--
New Jersey	488	15,326	4	4	4	4	4	4
New Mexico	26	667	1	20	8	304	17	343
New York	5/ 440	5/ 19,879	2	126	5/ 229	5/ 12,751	5/ 209	5/ 7,002
North Carolina	332	12,192	2	26	173	7,725	157	4,441
North Dakota	9	200	1	10	3	82	5	108
Ohio	95	3,517	2	50	87	3,455	6	12
Oklahoma	399	9,344	--	--	56	3,028	343	6,316
Oregon	151	4,496	--	--	26	1,311	125	3,185
Pennsylvania	216	7,169	111	3,670	62	2,493	43	1,006
Puerto Rico	162	5,648	133	1,428	11	263	118	3,957
Rhode Island	22	1,126	--	--	18	851	4	275
South Carolina	188	7,566	14	528	6	815	168	6,163
South Dakota	2	65	--	--	1	45	1	20
Tennessee	684	24,969	4/	4/	4/	4/	4/	4/
Texas	1,553	56,690	--	--	396	20,311	1,157	36,379
Utah	65	2,569	--	--	--	--	65	2,569
Vermont	29	694	6	215	7	220	16	259
Virgin Islands	12	293	5	160	6	118	1	15
Virginia	238	11,335	2	85	118	5,626	118	5,624
Washington	133	5,398	--	--	68	2,823	65	2,575
West Virginia	33	957	--	--	14	502	19	455
Wisconsin	154	3,924	7	472	98	2,352	49	1,100
Wyoming	34	759	--	--	9	245	25	514

1/ Total includes 1,200 Centers with a capacity of 39,700 children which were not reported by auspices
4/ Not reported
5/ Incomplete

Source: Irving Lazar and Mae E. Rosenberg, "Day Care in America," in Day Care: Resources for Decision, National Center for Educational Communication, Office of Education, U.S. Department of Health, Education, and Welfare (reprint).

in activities, facilities, intent, clientele, and quality.[27,29] Charges for day care vary; generally, proprietary centers charge between $15 - $20 per week per child while non-rpfoit centers charge between $10 - $15 per week. The Westinghouse/Westat survey noted that blacks were the heaviest users of day care centers. Blacks accounted for 14% of the pre-school population, yet approximately one-third of the day care enrollees are black (and more than one-half of them in non-profit facilities). Additional Westinghouse/Westat findings were that day care centers tend to be small operations, fully one-half accomodating less than 30 children. Most day care centers are located in residential areas; few are provided by employers.[27]

For descriptive purposes, the program categories used by the Westinghouse/Westat survey are useful. A "category A" center provided custodial care; a "category B" center provided custodial care plus an educational component; a "category C" center provided custodial services, an educational component, and auxilliary services (such as counseling, health services, and parent participation). Gross figures, giving the percentage of day care homes in each category, were not cited. 79% of "category A" centers were proprietary; staff-to-student ratio hovered between 1:12 or 1:15. 68% of "category B" centers were proprietary; one-fourth of the 32% non-profit centers in this category were church-run. Staff-to-student ratios were the same. However, a higher proportion of the staff in "category B" centers consisted of certified teachers (hence salaries were higher), and more materials and play equipment was in evidence. 83% of "category C" centers were non-profit; one-half were run by community action groups. Staff-to-student ratios hovered between 1:4 or 1:6, with a more highly trained staff than "category B" centers. "Category C" centers did not have the edge in equipment. The clientele of the "category C" centers is the least affluent; many such centers are funded through federal programs (ie, Head Start) and serve the least affluent sectors of the population. "Category A" centers are largely unsubsidized, serving a largely lower-middle-class clientele. "Category B" centers serve a somewhat more affluent clientele than do category A centers.[6]

Schultze et al, writing in Setting National Priorities, The 1973 Budget, note that day care center costs per child are reliant upon two main factors:

1) the staff-to-student ratio, and 2) the staff salary schedule, with highly-trained staff members able to command larger salaries.[6] Westinghouse/Westat findings were that category A centers had an estimate cost of $324 per child per year; category B centers an average cost per child of $540; and category C centers an estimated per child annual cost of $1,368. Schultze and his collegues considered these figures underestimatations due to errors of omission by the institutions.[27] Institutions in none of the categories had what would qualify as a highly paid staff.[6] The Brookings Institution staff also noted that many nonprofit centers were run on the principle of a trained staff member supervising less highly trained aides and felt that such an approach was meritorious.

3.2 Other Programs in Early Childhood Education

3.2.1 Infant and Toddler Care

The upward age boundary of early childhood education has previously been defined as entrance into the primary grades, usually occuring by age six. By inference the beginning of early childhood education has been assumed to be birth. Most of the energies in curriculum development and program implementation have gone towards dealing with "older" pre-schoolers, those children two years of age or older. Although the difficulties of educational work with infants and toddlers may easily be imagined, a small amount of research indicates that this might be the most malleable age for effective developmental effort.[7]

Children of low-income, low-IQ Milwaukee mothers (all of whom were black) were placed at 3 months of age in an experimental infant education center which operated five days a week. The first year one teacher was assigned to each child, playing with him during his waking hours, and engaging him in simple problem-solving games. The teacher-child ratio increased slightly during the course of the 5-year project cycle. Intensive individual attention distinguishes the Milwaukee Project's curriculum from that of other pre-schools. 16 of the original 30 children have remained with the Project for its six years of existence. When measured against a control group, composed of children from similar environments

who did not receive educational help from infancy on, Project participants have an I.Q. advantage averaging 30 points. Should subsequent testing reveal that Milwaukee Project alumni continue to maintain their advantage upon completion of the second or third grade, the merits of infant education may be more widely examined.[7]

Schultze et al., in the Brookings Institution examination of the FY 1973 federal budget noted that an intensive infant program in Syracuse, New York, reported great gains for youngsters who received infant education over a control group who did not.

The National Program of Early Childhood Education (NPECE) is designing, as two parts of its total program, an Infant Model Component and a Toddler Model Component. St. Louis-based NPECE is devoted to translating early childhood research into educational programs. It heads a network of seven university research centers and distributes its findings through the Central Midwestern Regional Educational Laboratory. The thrust of the NPECE Infant Model is to determine the physical conditions for optimum care. Determination of the best arrangement of sleeping, diapering, feeding, and play areas, and the most efficient staff procedures, are the variables being examined to enable infant centers to render the best care. NPECE notes that attention is also being given to the creation of "intervention procedures" for an infant care program.

The NPECE Toddler Model Component is also concerned with the same variables of the physical environment necessary for optimum care, plus the determination of a standardized measurement for toddler care and education, flexibility in staff procedures to enable easy realignment upon necessity, and appropriate training materials and strategies.

Results from both the Infant Model Component and the Toddler Model Component will be fed into the NPECE Pre-School Model Component.[8]

Neither component appears to be using or developing audio-visual materials as part of its work, concentraing instead upon insuring maximum student-to-staff interaction. The operations of the Milwaukee Project with respect to infant care seem based upon the same principle.

3.2.2 Learning Through Toys: The Toy Lending Library

The Far West Laboratory for Educational Research and Development in San Francisco, California, one of the regional educational laboratories created to design and field test new educational products and strategies, has developed and implemented the Parent/Child Toy Library. Built upon the concept that parents can aid their children to learn through judicious play, the Laboratory has developed materials to train parents in promoting conceptual learning and language development in their children through the use of eight basic toys.

Libraries may be established in any feasible setting convenient to the parent population (ie., storefronts, schools, churches, day care centers, community centers) and need not be run by professional early childhood educators. Pre-packaged instructional materials for parents are studied at eight weekly sessions. Each week a parent takes home a different toy, works with his child and the toy for the remainder of the week, and returns the following week for additional instruction and exchange for a new toy. Parents are free to continue to borrow toys from the library after the eight sessions have terminated. Additionally, there is a second series of eight toys and parent instruction materials.

Pre-packaged materials for parents include a guidebook (a different guide for each toy series used), eight film strips and cassettes for group instruction, and a 16 mm color film for parental introduction to the program. Toys within each series may be purchased individually for replacement purposes. Costs incurred in setting up a library include all materials. Parent manuals are $1.00 each; librarian manuals are $1.50. The audio-visual aids are priced at $100.00 for the film strips and cassettes, and $150.00 for the film. The set of the eight initial toys total $47.00, and the second toy series costs $54.00. The Far West Laboratory has written a "Guide to Securing and Installing the Parent/Child Toy Lending Library" which is distributed through the Government Printing Office. Topics covered include program evaluation, librarian training, toy construction and funding sources for the establishment of a library.[9]

3.2.3 Home Start

As the name indicates, Home Start is a program designed to deliver comprehensive early childhood education and care to the child in his own home. Particular attention is given to the parent by fostering the realization that he is the child's primary educator, motivator, and "developmental specialist," and encouraging him to act in these capacities while the child is at home.

The target audience is children between the age of 3 and 6 who would also meet the eligibility requirements for Head Start. The delivery mechanism is a specially-trained paraprofessional home visitor, preferably an individual indigenous to the culture and socio-economic status of the families being served. A Home Start program must be able to supply after hours services, i.e., in evenings and on weekends. Delivery of related services which make the program comprehensive in scope is through utilization of existing community facilities for health care, counseling, job placement, etc. Preference is given to community services available on a no fee or reduced fee basis. When necessary, Home Start will pay for the necessary services.

Established under the auspices of the Office of Child Development, the principles underlying Home Start were operational in many locally-operated programs throughout the country. OCD establishment of a national pilot program is to test the possibilities of an alternative to center-based delivery of comprehensive early childhood services. Home Start programs will try to determine and provide data on delivery options within this framework; options include home visitation with both parent and child, with televised instruction (no new production anticipated), or home visitation for parent or parent groups only.

15 Home Start programs were begun in March, 1972, and $1.5 million was appropriated from the FY 1972 budget. The 15 selected programs were chosen to represent each of the ten Health, Education, and Welfare regions, and the Appalachian, Indian, and migrant special population groups (at least one Home Start program for each of the special population groups.) During FY 1974, Home Start will be expanded to include a program in San Diego, California. The initial funding period is to run 17 months, until July, 1973.

Continuation of funding for each program in the demonstration is contingent upon: 1) the program's ability to meet evaluation requirements (concerning such things during the first year as the number of families involved, the desireability of recruiting children who will remain within the target age range for at least two years), and the program's willingness to participate in the OCD-funded evaluation, and 2) the availability of funds to continue the demonstration for an additional two calendar years beginning in July, 1973.

Initial funding for each program was in the $100,000 range, and was awarded for the first twelve months. Funding was channeled through an existing agency entitled by law to receive supplemental funds for such programs (ie, Head Start, Community Action Agency) and which had previously agreed in writing to serve the local Home Start program as a disbursal agent. Home Start budgets include provisions for personnel and consultants, equipment and supplies, operating expenditures (travel, rent, utilities, office expenses, etc.), and a contingency fund. Original plans indicated that the necessity of a 20% contribution by the local program (as required for Head Start funding) might be reduced for Home Start participants.

Since the program is heavily reliant upon the success of the home visitor in working with the client families, staff training assumes great importance. Local programs selected for the demonstration had to submit plans for staff recruitment, pre-service, and in-service training. Local staff planning must provide for participation by paraprofessionals, parents, and volunteers. Although academic credentials were not prerequisites for staff selection, local programs were encouraged to provide career opportunities for staff by making training procedures of the quality that could be converted into academic credit.

Evaluation will apparently begin after the initial operating period of 17 months. By postponing the rigid evaluation, the Office of Child Development hopes to be working with on-going, operational programs that reflect viable alternatives reflective of local preferences.[10]

4. LARGE-SCALE ELECTRONIC DELIVERY OF EARLY CHILDHOOD EDUCATION

4.1 Preconditions for Technological Delivery

Early childhood educational services may be delivered either to an institutional setting (including day care centers, pre-schools, or teacher training institutions) or to a home setting (an individual home or Family Day Care Home).

It follows that early childhood education may either be a group or an individual experience. Therefore, as is usually the precondition for applications of large-scale technology, the coverage area must be sufficiently broad to insure some degree of economy of scale. Applying this maxim to early childhood education, two preliminary coverage areas may be defined: 1) a geographical coverage area, and 2) a defined target audience.

4.1.1 Distribution and Control of Delivery Points

Determination of a precise geographical coverage area is related to the notion of institutional control. Early childhood education retains the American educational pattern of decentralized control. The content of pre-school educational programs may vary among institutions within a given locality. Coordination of pre-school programs may not exist on a state-wide level. Therefore, delineation of a distinct geographical coverage area may be difficult to ascertain.

There is now interest in rethinking through the dilemma, most notably to provide some degree of coordination on a higher, but not olympian, level. State-wide efforts in this direction would provide manageable units and perhaps could serve as the building blocks of regional consortia. The Education Commission of the States* issued a report in June, 1971, entitled Early Childhood Development, Alternatives for Program Implementation in the States. The report was issued to provide state planners and policy makers with data on the various approaches possible in providing early childhood education within the umbrella of educational services furnished by the state.

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*The Education Commission of the States is a non-profit organization headquartered in Denver, Colorado, which seeks to promote partnership between educational and political leadership in the study of educational issues of national concern. To this end the Commission collects data, conducts studies, issues reports, and serves as a clearinghouse for related materials. Participating political entities include 2 territories and 44 states.[36]

Table IV (Appendix B) indicates the state of public preprimary education in the nation according to the availability of kindergarten and preprimary programs, funding, and the degree, if any, of coordination among state agencies servicing each preprimary sector. Important informational highlights are: 1) 21 states (plus American Samoa and Guam) listed the same agency as responsible for both kindergarten and preschool. Within that grand total, 4 states indicated that local school boards were responsible, and for 11 more states the sole agency for kindergarten was a member of a group of agencies for preschool; 2) 14 states described the form of coordination between agencies administering kindergarten and preschool as "informal,"* 3) 13 states reported no state funds for either kindergarten or preschool. 30 states provide no funding for preschool activities;+ and 4) the range of state funding for early childhood education varies. Kindergarten funding, during 1969-1970, on a per pupil basis, ranged from a low of $17 in Nebraska to a high of $900 in North Carolina. Preschool funding, during 1969-1970, on a per pupil basis, ranged from a low of $200 in Connecticut to a high of $1,000 to $1,400 in California.

4.1.2 Delivery of Early Childhood Education by Defined Target Audiences

A wide-ranging audience may be found by using the criteria of the target audience. This means that an audience, bounded by common interest rather than geography, may be defined and attracted by programming designed to address itself to that audience. In the case of early childhood education, three potential target audiences may be defined: 1) preschoolers who would be the recipients of early childhood education, 2) parents of preschoolers who would receive training in maximizing

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* This figure is derived by subtracting the number of "not applicable" responses, 16, from 51, since Mississippi did not answer. 35 applicable responses remain; of those, 14 were described as "informal."

+ 30 is arrived at in this fashion: 43 states reported no state funding for prekindergarten activities. Of this number, 13 had been previously counted as having no funding for either kindergarten or prekindergarten activities. The remainder is 30, becoming the number of states with no prekindergarten funding.

effectiveness for encouraging learning and development within the everyday environment, and 3) educators of preschoolers who might receive either initial training or continued training. These groups represent the basic audiences for preschool educational services, whether such services are delivered by one-to-one personal contact or national television programming.

The possibility of overlap among target audiences should not be overlooked. "Sesame Street" evaluations have demonstrated that the program's teaching effectiveness is enhanced by parents who encourage viewing, view with the child, and provide follow-up by talking of the show afterwards with the child.[12] That is but one example of target audience overlap. The point is that the three target audiences so defined constitute the "market" for early childhood education programming and materials.

It should be noted that technology applied to the field of early childhood education usually means television. Television appears to be the one medium with the broadly-based capabilities to transmit the type of programming needed for this market. For example. computer-aided-instruction is usually not thought of as an instructional tool in a preschool setting. Although various early childhood centers may have film projectors and other pieces of hardware indicative of educational technology, the most pervasive medium for this market remains TV. When speaking of the nature of the programming available, it is convenient to classify it in terms of its intended target audience.

4.2 Programming for Pre-Schoolers

Educational programming is available on both commercial and public television outlets to serve the preschool audience. The following examples are some, but not all, of the preschool programs provided by the television networks. CBS regularly broadcasts "Captain Kangaroo," a program specifically designed for pre-schoolers, on a five-day-a-week basis (9 A.M., E.S.T.). During the spring and fall of 1972, 3 1/2 minute filmed and animated inserts highlighting cognitive and affective objectives appeared as part of the program. The segments were a joint venture of the Department of Health, Education, and Welfare, the CBS Television Network, and Sutherland Learning Systems.[13]

NBC-TV has offered "Watch Your Child," a program fusing education and entertainment for pre-schoolers. "Watch Your Child" regularly features a video insert showing the aural portion translated into sign language for deaf viewers.[32,33]

ABC-TV provides children's programming with an educational component. However such programming may be designed for a more inclusive audience than just pre-schoolers. Examples include the Saturday morning "Scholastic Rock" segments which are 3-1/2 minute minilessons and the monthly "ABC After School Special."

However, children's programming on commercial networks does not elicit universal comments of contentment and delight. Action for Children's Television (ACT), a Massachusetts-based group, is developing a national constituency with its demands for more responsible children's shows from commercial broadcasters. Frequently-voiced complaints concern ubiquitous commercials and constant violence in programs designed to attract the child audience. A recent ACT poll, in conjunction with Parade Magazine and the Boston University Department of Communication Research, discovered similar sentiments from a nation-wide response representative of many demographic groups. Table VII lists the twenty television programs watched most often by the respondents' children or siblings.[34] An interesting feature is the strong showing of Public Television offerings. However, the socioeconomic status of the responding audience was not made clear in the study.

National public radio does not, at this time, provide programming for early childhood education; however, public television broadcasts three series. "Electric Company," produced by the Children's Television Workshop, is primarily intended for the primary grade audience. However, industry sources note that the program attracts a pre-school following. "Mister Roger's Neighborhood" is intended for children ages 3 through 6. This program deals with affective development in children by trying to promote social growth and personality development. A 1972 study prepared for The Interagency Panel on Early Childhood Research and Development by Searcy and Chapman described the content of "Mister Roger's Neighborhood" as consistently involving: learning, emotional expression, concept of self, play, and relations with others.[14] The program is aired weekday afternoons.

TABLE VII

Action for Children's Television Poll
Revealing the 20 "Most Watched"
TV Shows by Children

THE TOP 20

A total of 6961 different programs were listed in answer to the question "Which programs does your child watch most often (list up to five)?" Following are the 20 most frequently named, with the percentage of respondents listing them.

	PROGRAM	PERCENTAGE
1.	Sesame Street	62.4
2.	Electric Company	40.6
3.	Mr. Roger's Neighborhood	36.2
4.	Captain Kangaroo	22.8
5.	Walt Disney Presents	20.6
6.	Flintstones	18.6
7.	Brady Bunch	14.1
8.	Partridge Family	10.0
9.	Lassie	8.3
10.	Gilligan's Island	8.0
11.	Zoom!	6.8
12.	Speed Racer	6.6
13.	Romper Room	6.2
14.	Wild Kingdom	6.2
15.	New Zoo Revue	6.1
16.	I Dream of Jeannie	5.9
17.	The Waltons	4.8
18.	Emergency	4.5
19.	I Love Lucy	4.5
20.	Mouse Factory	4.5

Source: Herbert Kupferberg, "What You Think of Children's TV," Parade, March 4, 1973.

The third series offered by PBS is "Sesame Street," which is also produced by the Children's Television Workshop. "Sesame Street" is perhaps the most-researched children's television program. The show was designed for pre-schoolers. Its educational component includes measurable, cognitive skills that enable the viewer to go to kindergarten prepared with a helpful skill repetoire. The Educational Testing Service has been engaged by the Children's Television Workshop to conduct follow-up studies on the effectiveness of "Sesame Street" in achieving its educational goals. Results for the first two seasons, 1969-70 and 1970-71, have been published.*

4.2.1 "Sesame Street"

Generally, one point has emerged from both ETS studies of "Sesame Street": the more the child viewed "Sesame Street" the more he would learn. Encouragement to view, and reinforcement of the program's objectives, were aids to viewing and learning. The research determined that advantaged viewers had a tendency to watch the show more often than disadvantaged viewers; efforts were made to equalize effectiveness by encouraging viewing and reinforcing learning objectives among the disadvantaged population.

Data for the premiere season, 1969-70, were amassed from the target audience of at-home pre-schoolers. The research sample consisted of 943 3 to 5 year-old children, of which 731 were considered disadvantaged. Data was gathered in part by pretesting and post-testing this sample.[12,15] Other distinctions made regarding the sample were: Spanish-speaking children (sample = 43) and rural children (sample = 61). The data indicated that all viewers educationally profited from the experience, with those profiting the most who viewed most frequently. A tentative finding was that the Spanish-speaking were the biggest gainers if they viewed frequently. Rural children made great gains.[12] Follow-up data indicated

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* Ball and Bogatz, First Year of "Sesame Street": An Evaluation (Educational Testing Service: Princeton, N.J., 1970).

Bogatz and Ball, The Second Year of "Sesame Street": A Continuing Evaluation, Volumes I and II (Educational Testing Service: Princeton, N.J., 1971).

that

> "-- there were no significant differences between the gains of disadvantaged white children and disadvantaged black children."[15]

The data from "Sesame Street's" second season, 1970-71, was generated by a sample heavily-weighted by disadvantaged children. Data was again collected, in part, by pre-testing and post-testing the subjects. 632 constituted all those who completed the full research cycle. The target audience was the disadvantaged pre-schooler whether at home or at-school, for by this time some members of the original "Sesame Street" class had entered the ranks of formal education. The cognitive goals of the show had changed, ruling out specific categorical comparisons. However, some interesting findings emerged. Steady viewing increased the show's effectiveness; so did encouragement, or the act of encouraging a potential viewer to actually watch the show. It had previously been determined that advantaged viewers had a tendency to watch the show more often than disadvantaged viewers. The encouragement factor, therefore, had implications for utilization and field staffs; how could the disadvantaged, that segment most in need of the "Sesame Street" format, be encouraged to watch and benefit from it?[15]

The first year's tentative findings regarding Spanish-speaking viewers remained unconfirmed. Data for year number two included a Spanish-speaking sample of 66. No findings were generated when the control group failed to function, and a comparison group of non-viewers failed to materialize. The Age Cohorts Study indicated that consecutive two-year viewers demonstrated greater mastery of more complex tasks. Viewers for whom "Sesame Street's" second season represented their first year in school did not "turn off" to formal education as hypothesized by some.[15]

Efforts are made to provide adjunct services which complement "Sesame Street" programming, hopefully enhancing its effectiveness. The Community Education Services Division of the Children's Television Workshop functions to create ways to increase viewership and usage of CTW shows. The Division's efforts are largely focussed on rural areas, inner-cities, and non-English speaking communities. Implementation of these strategies rests with the Field Services Department of CTW. Through field coordinators at seven

regional offices, CTW seeks to form working relationships with local community groups, a priority goal being the establishment of viewing centers. The Program Development Department, another component of the Community Education Services Division, exists to provide guidance and materials to any organization interested in using CTW products to further children's education. The Program Development Department is also charged with the development of additional program approaches necessary to facilitate community involvement.[16,37]

Such services are in the form of follow-up work via person-to-person delivery. The intent is to reinforce the academic lessons of the show. The mechanism may vary. The parent may be trained to administer materials devised by Children's Television Workshop or to create his own. Perhaps the children will view in a group setting and have the lessons reinforced by paraprofessional volunteers. However the mechanics are designed, the point is not to let the TV show stand or fall on its own, but to insure some follow-up in hope of enhancing the educational component of "Sesame Street."

Examples include the Children Television Workshop - Neighborhood Youth Corps summer project, which completed its second summer of operation during 1972. NYC enrollees are trained to lead and devise reinforcement exercises for "Sesame Street" viewers. Last year (1972) the project spread nation-wide, expanding to 33 locations.[16]

Another community project emanates from the CTW Appalachian Field Service Office in St. Paul, Virginia, and is referred to as the Appalachian Project. The District Coordinator selected 40 mothers with viewing-age children. All of the mothers watched "Sesame Street" with their children and reinforced the program's lessons by following taped instructions and using supplementary materials supplied by CTW. 20 of the women received additional training at periodic workshop sessions at which the emphasis was upon utilizing common household articles to construct learning materials for their children. The remaining 20 women received similar instructions over audio tape. Both groups of mothers were able to make instructional materials from easily-accessible items. Statistical analyses were not run on the Project, but continuation and participation rates were high. Mothers participating during the past year have indicated a willingness to

serve as neighborhood clinicians for their neighborhoods.[17]

How this additional at-home/at-center component affects the total cost of CTW programming is not known. Table VIII notes that the initial cost of "Sesame Street"

> "... may be as low as $1 per year per child."

More recently, former U.S. Commissioner of Education Marland quoted a $129 per-child per-year price tag for "Sesame Street."[26] Either figure would still place televised "Sesame Street" instruction within the low-cost options for early childhood education. Excluding the follow-up component of the design, the CTW "Sesame Street" budget is divided so that the lion's share -- 70% -- goes for actual program production. The first year of production, with 130 hours of programming, yielded the "rule-of-thumb" cost figure of $40,000/hour of program production. The remaining 30% of the budget was divided so that 10% went for distribution and 20% for administration and research.[18]

The follow-up component for "Sesame Street" seems to be heavily reliant upon training paraprofessional volunteers, or workers paid by another source.* Training and training materials are provided by the CTW staff. However, the majority of "field workers" would seem to be trained volunteers of parents, so the additional cost to CTW may be centered in the staffing and operation of the Community Education Services Division. The funds for supportive activities emanating from this division may not represent an "add on" cost, but rather a portion of the funds available for administration and operation as divided among the various divisions of CTW.

Table VIII places television programming among the least costly options for delivering early childhood education. The more labor-intensive options (i.e., in-school attendance) were more costly. Programs that combined the two, i.e. - the Appalachian Educational Laboratory Preschool Project, were listed on Table VIII as more costly than TV programming but less expensive than center/school-based programs.

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*For example, the Summer Project enrollees paid by the U.S. Department of Labor's Manpower Administration received approximately $40 per week for their work during the summer of 1972. The total budgeted by the Manpower Administration was $2.5 million.[35]

TABLE VIII

ALTERNATIVE STATE PROGRAM APPROACHES: A SUMMARY

The following table has been compiled to highlight the major features of the several alternative approaches which states might consider in developing early childhood programs and which are discussed more fully in section 5.2.

Target Orientation	Program	Objectives	Funding Methods/Costs	Evaluation
Education for parents of children younger than three, based on demonstration centers.	Comprehensive health and developmental training for expectant and new parents.	To prevent most severe health and educationally related handicaps by early parent training and diagnosis to help families do a better job of rearing their children.	State could operate demonstration child care centers or license, supervise and subsidize locally or privately run centers. A diagnostic center could operate for $25 per child.	A creative and innovative program for children from 0-3 or 4, according to some experts, offers the greatest benefits by preventing later health and educational problems.
Reaching the child in his home.	Classroom training of parents to work with their own children; e.g., toy library.	Even with limited training program, large numbers of parents can be helped to enhance the early development of all youngsters in the family.	Costs can be as low as $100 per family.	Has proven effective on limited scale. Problem of no follow-up and little chance of diagnosing difficulties unless family returns to program for help.
	TV training of parents to work with children.	Through parent-oriented programs, probably in conjunction with a child's series; programs to train parents to work with their own children.	Average cost of a proposed program in the Southwest for bilingual families is 50 cents per family per year.	Model program has not yet been developed. Might be difficult to reach groups with greatest need. Potential is believed to be great.

TABLE VIII

ALTERNATIVE STATE PROGRAM APPROACHES: A SUMMARY

(continued)

Target Orientation	Program	Objectives	Funding Methods/Costs	Evaluation
	Parent training including a home visit by a professional.	To monitor and assist parent participation in child's development through visit by qualified professional teacher or aide to work with parents and children in the home situation.	$200-$300 per child, as indicated by experimental program at the University of Illinois, Urbana.	Initial results of demonstration program encouraging. Home visit encourages parents, maintains progress and is useful in diagnosing and solving problems.
	TV programs for children.	To supplement parent and other child development efforts by providing entertaining TV fare.	Initial cost, as indicated by Sesame Street, may be as low as $1 a year per child. Tapes can be bought by states for reuse as desired.	Initial year's program of Sesame Street effectively increased viewers learning. May be difficult to reach children with greatest need.
Combined approach--reaching child in home and group experience.	Parent training, home visit plus limited classroom experience for children. TV as instructional aid.	Parent involvement in child's development at home is supplemented by TV assistance. Children also benefit in social growth by sharing and working together in a group.	$235 per child as indicated by model program developed by Appalachia Educational Laboratory.*	Appalachia program has been successful in using paraprofessionals and in rural areas. Could be applied in urban situation. Combined approach offers

*See Section 4.2.2 for more recent per child cost data.

TABLE VIII

ALTERNATIVE STATE PROGRAM APPROACHES: A SUMMARY

(continued)

Target Orientation	Program	Objectives	Funding Methods/Costs	Evaluation
Combined appraoch-reaching child in home and group experience. (cont.)		The combined approach offers added possibility of identifying youngsters or families which need special help because of mental or physical handicaps.		significant developmental benefits.
Providing group experiences for young children.	Support and extend Head Start programs.	Extend proven benefits of Head Start programs to more children building on existing administrative and facilities resources.	Average cost is $1050 per child. Substantial savings if administration of ongoing and new programs could be consolidated.	The advantages of a Head Start type program in meeting special needs, using specially trained but not all certified staff and community facilities could be extended to a high-quality state program.
	Subsidization of private programs for selected children.	To aid children most in need through existing programs especially when no, or insufficient, public programs exist.	A voucher to be provided to each child to be redeemed in educational services. Value could be determined according to need and state resources. State might consider establishing loan fund to assist in expansion of facilities.	Would enable state to offer support for pre-primary programs with a classroom emphasis without major outlay of funds for facilities and personnel.

TABLE VIII

ALTERNATIVE STATE PROGRAM APPROACHES: A SUMMARY

(continued)

Target Orientation	Program	Objectives	Funding Methods/Costs	Evaluation
Providing group experiences for young children. (cont'd)	Day care, with planned and developmental experiences explicitly provided.	To encourage provision of day care services for working parents and to enhance the program with planned developmental experiences, state to support an educational component or full-time professional staff.	State encouragement of federal and private funding of overall day care program; e.g., state matching funds for federal grants under Title IV, Social Security Act and Tax incentives for industrial programs for employees. Cost would be about $1,500 per pupil or less if limited educational component provided.	Would help meet growing need for day care while enhancing the development of children of working parents who might be among those with great need for such a program. Should probably be part of every state's early childhood effort.
	TV in a classroom situation.	To supplement classroom efforts with innovative programming; could be basis for expanded program.	Some savings in materials with a concomitant increase in quality should be realized.	Will be increasingly important as communications technology advances (e.g.: NASA plans for communications satellite available for educational programming.)

TABLE VIII

ALTERNATIVE STATE PROGRAM APPROACHES: A SUMMARY
(continued)

Target Orientation	Program	Objectives	Funding Methods/Costs	Evaluation
Preschools	Classroom training for 3 and 4 year-olds.	To provide classroom programs for younger children.	At least five states provide funds for preschools usually through special demonstration grants. Per pupil allocations range from $200 to $780 per year.	Although preschools offer social and developmental experiences, they are expensive and other alternatives may be as effective and involve parents more. State support for establishing formal preschools should be a limited part of a comprehensive program.
Kindergarten	Classroom programs 3-3 1/2 hours per day, 5 days a week.	To provide a classroom program for five year-olds.	Kindergartens are now operated in at least 38 states and funded usually through the foundation program in 28. State support ranges from $17 to $900 per pupil. This does not include provisions for comprehensive services.	In kindergarten not yet established, children would be best and most economically served by a combination of the alternatives outlined, probably including some kindergarten-type programs especially for the handicapped and those with learning disabilities.

TABLE VIII

ALTERNATIVE STATE PROGRAM APPROACHES: A SUMMARY

(continued)

Target Orientation	Program	Objectives	Funding Methods/Costs	Evaluation
Accrediation of private programs	Regulating standards of private preschools and kindergartens, especially those established by franchising.	To insure state surveillance over physical facilities, staff qualifications and minimal program standards; flexibility is essential.		All states should probably initiate efforts to insure minimum standards in private programs.

Source: The Education Commission of the States, Task Force on Early Ehildhood Education, Early Childhood Development Alternatives for Program Implementation in the States. Denver: Education Commission of the States, 1971.

4.2.2 Appalachia Pre-School Education Program

The Appalachia Pre-school Education Program is oriented towards the at-home rural pre-school audience ages 3 to 5. It was designed by the Appalachia Educational Laboratory and for the past four years has served an eight-county area of West Virginia. The Appalachia Pre-school Education Program is designed with three component parts: 1) a television program entitled "Around the Bend" which is seen 5 days a week, 2) a weekly in-home visit by a trained paraprofessional to reinforce the concepts presented over TV, and 3) a mobile pre-school classroom that makes weekly visits to specified locations throughout the viewing area to give viewers reinforcement within a classroom setting.

Studies of the project divided the sample into four groups: 1) those children who watched the daily TV show, were visited weekly by a paraprofessional, and attended the weekly mobile classroom (TV-HV-MC), 2) those children who viewed the TV show and received a weekly home visit (TV-HV), 3) those children who watched "Around the Bend" only, and 4) a control group exposed to none of the preceding options. Based upon a curriculum-specific testing instrument, the Appalachia Preschool Test (APT), administered during the third year of field testing -- (1970-71), the general findings of the previous two years were upheld. The television programming presented the basic curricular material which is enhanced by the paraprofessional's weekly home visit to reinforce the academics. The mobile pre-school classroom yields no appreciable effect unless it was visited often enough by the viewer. "Often enough" may be construed as greater than 60% of the time.[19]

A cost analysis yields the following figures based upon a projected audience of 25,000. The costs for developing the curricular part of the project, including production of the televised component delivered over broadcast facilities, were $204,410 or $8.18 per child in operating costs,* and $1.50 per child in related capital outlay. The television component was videotaped and circulated among cooperating commercial television stations; interestingly, an additional $25,500 would allow simultaneous regional broadcast.[19]

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* Operating costs are also derived from actual operating expenses. Therefore, program production cost per hour was $100 at prevailing West Virginia prices. Replication of this program model would have to be figured at prices prevailing in the specific region interested in implementing a similar project.

The materials development and operational cost is unrelated to the number of users. More related to the number of users is the cost of field testing. However, the Appalachia Educational Laboratory again figured field testing costs in terms of 25,000 users. The personnel requirements for 25,000 children would be: 167 certified teachers, 167 aides, and 667 paraprofessionals. The paraprofessional home visitor, the largest personnel requirement, would be paid an average of $3,500 - the same rate as is paid the aides. The total operational cost for field operations, projected to cover an assumed 25,000 users, would be $6,053,831.00. Prorated over 25,000 users, the per child cost is $242.15.

Total costs, per 25,000 users are: total operational cost = $6,258,241.00* for a figure of $250.33 per child, while the total capital outlay ran $2,747,000 which, amortized over a 5-year period, amounted to $21.98 per child. These figures are compared to the cost of a standard kindergarten education which was $496.00 per child in West Virginia during the 1969-70 school year. The capital outlay involved in the standard kindergarten set-up is 7.5 times greater than the capital outlay for the Appalachia Pre-school Educational Program.

4.3 Programming for Parents of Preschoolers

The field work done by Children's Television Workshop and the Appalachia Educational Laboratory indicate that effort must be made to follow-up pre-school telelessons in the home. Therefore, a legitimate target audience within the early childhood education market is the parents themselves. Not only do the parents watch the preschool programming with their children, but broadcast affords an opportunity to reach the parents directly and introduce them to helpful techniques for working with their children.

Such a program is currently in development by the Central Midwestern Regional Educational Laboratory in Minneapolis. The target audience is mothers of infants and pre-school age youngsters who have limited educations and fall into the lower socio-economic class. The delivery mechanisms are a series of half-hour broadcasts and a programmed text specially constructed for use by parents of low educational attainment. Both the broadcast and the programmed text are to be used together, but each may be used independently. The intent is to teach mothers ways of reinforcing their children's

*Total operational cost is the sum of total operational cost for field operations ($6,053,831.00) and total operational cost for curricular preparation -- materials and telelessons-($204,410.00).

positive behavior. It is hoped that this strategy would then be carried over by the mother to make the home environment more conducive to learning and enrichment.

The entire package seeks to involve the audience, either through response to the programmed text, entitled Teaching Your Child, or through response to the simulated situations portrayed on the television program. Field testing thus far conducted has been with two types of populations: 1) two groups of inner-city parents, and 2) a group of rural parents. The object of the testing has been to ascertain audience reaction and to determine needed modification. An anticipated spin-off of the project will be a text, for professional educators, of limited publication, entitled "Strategies for the Design of Parent Training Programs: Intellectual Stimulation and Motivation of Young Children." The project prototype was completed and tested by October 15, 1972; exact broadcast and print dissemination plans are yet to be determined.[20]

4.4 Programming for Educators of Pre-Schoolers

The third definable audience within the early childhood education market consists of those involved in the education of pre-schoolers, other than parents. Early childhood educators may be on one of two levels: 1) a professional certified teacher for this age group, or 2) a paraprofessional trained in specific strategies to implement the education of young children. Previous examples have illustrated the uses of each kind of personnel. Working professional teachers may be serviced by special programming to keep them current of relevant new information. In-service training of working professionals is outside the purview of this report. Professional-educators-in-training may be serviced by either broadcast programming or computer-aided-instruction. The other potential audience is the paraprofessional, who may be needed in greater numbers and who will receive a different kind of training.

An estimate of the demand for paraprofessionals has been made by the U.S. Department of Labor. The USDL figures 23,000 new child care workers will be needed annually during the eight years between 1972 and 1980. Included in this estimate are the anticipated 5,000 degree holders in early

childhood education who will be graduated each year. One suggested means of easing the expected 18,000 annual shortage of trained child care workers is to devise training materials for paraprofessionals already in the field.[30]

Tables V and VI, appended to this report, provide insight into the potential demand from this market sector. Table V, (Appendix C) gives a state-by-state run-down on personnel development. Eight states (including Puerto Rico) have no four-year institutions offering degrees in early childhood education. 27 states have no two-year institutions offering associate degrees in early childhood education.

Data shown in Table VI, (Appendix D) depicts the other side of the coin ... those states requiring formal program completion for work within the early childhood education field. Thirty-eight states consider an elementary certificate sufficient for kindergarten and pre-kindergarten teaching. This figure was arrived at by counting every "yes" response -- qualified or unqualified. Paraprofessional training may be summarized as follows: six states require certification for paraprofessionals on the kindergarten level, Ohio requires permits for kindergarten aides; four states require certification for paraprofessionals operating on the pre-kindergarten level; nine states unqualifiedly require certification for day care personnel; Connecticut requires certification if the Center is operated by the Board of Education; and Colorado licenses its Centers. Should the movement develop for greater specialization in the early childhood education field, or for certification of paraprofessional personnel, a market will mushroom for a low-cost delivery system of these educational-training services.

4.4.1 On the Drawingboards: The Federation of Rocky Mountain States Project

"Sesame Street" and the Appalachia Pre-school Education Project are both examples of preschool education delivered, in large part, via broadcast facilities. While national in scope, and interested in appealing to any child within the age range of its target audience, "Sesame Street" does have an urban orientation -- as shown by its setting. The Appalachia Pre-school Education Project is expressely geared for the rural at-home pre-school audience. Both are designed to operate on a broad scale made

possible by broadcast facilities.

On the horizon in the field of large-scale early childhood education is the effort by the Federation of Rocky Mountain States. This regional consortium * will utilize the large-scale electronic delivery made available by the NASA ATS-F satellite to be launched in 1974. The major developmental and operational (production and installation) funding will come from the FY 1973 budget of the Office of Education.[14]

The eight-state demonstration will concentrate upon reaching those who work with pre-school-age children+ in an attempt to determine: 1) the effectiveness of the training offered to "caretakers" in advancing the quality of care during early childhood (as opposed to materials designed to train the children themselves), and 2) the most cost-effective mix of technology and personnel in program design. Different technologies will be used to reach the scattered target audience; telecasts, two-way audio, computers, and the possibility of two-way video are planned, without neglecting the human component since home visitors will also be used.

The demonstration will be structured so that material will be relayed via the technology most appropriate to that material (e.g., storing nutritional information in a central data bank available for accession on demand). To test the efficiency of various technology and personnel mixes, demonstration planners hypothesize that demonstration participants may participate in one of three ways: 1) as part of a group receiving in-service training on utilization of the available technological and material resources, 2) as part of a group receiving home visitations along with television programming and computer programming, or 3) as part of a group receiving instruction from the home visitor primarily. In the later case, access to material available from technological sources may not be present. The instructional format would be modular so that skill acquisition

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* Including the states of Colorado, Utah, New Mexico, Arizona, Wyoming, Idaho, Montana, and Nevada.

+ Project literature refers to the target audience as "caretakers," and includes parents, professional early childhood educators, day care center aides, foster parents, or anyone engaged in working with, and caring for, young children.

would not be hampered by the participant's inability to follow a rigidly prescribed and timed information flow.[21]

5. ALTERNATIVES AND THEIR COSTS FOR THE DELIVERY OF EARLY CHILDHOOD EDUCATION

Preceding sections of this memorandum have enumerated the variety of approaches to delivering early childhood education. This section will examine alternate approaches in terms of the cost factors attached to each, and then will delineate the components common to most delivery systems. The first series of approaches to be examined may be classified under the heading, Children: Location and Delivery of Services. This was essentially the approach used by the Brookings Institution staff when analyzing child care in Setting National Priorities, The 1973 Budget.

5.1 Children: Location and Delivery of Services

The first task is to identify possible locations for children of absent parents (ie., working parents) so that services may be delivered to them. Evidence indicates that most youngsters of working parents are cared for in their own home. In many cases this arrangement is possible because of the cooperation of other relatives. When care arrangements are kept within the family there may be no payment for these services; when care arrangements are kept within the home there is no additional overhead or start-up-costs.

A pre-schooler with a parent at home may be reached at his residence. Early childhood services are currently delivered to the home in many ways. Home Start, the television programming of the Children's Television Workshop, that of the commercial television networks, the pre-school program of the Appalachia Educational Laboratory, and the Toy Lending Library of the Far West Educational Laboratory are examples of home delivery that have previously been cited.

5.1.1 The Cost of Care Outside the Home

The cost of care outside the home is a subject of much concern. Three studies were examined by the Brookings staff and deserve attention here.

The first study was conducted in 1968 by Sugarman and Feldman. In assessing the annual dollar cost per child for day care, essentially the same descriptive categories were used as in the Westinghouse/Westat survey

(see Section 3.1.2); the classifications were custodial, custodial plus a development component, and comprehensive services. Costs for a preschooler's day care center were $1,245 for custodial services, $1,862 for custodial plus services, and $2,372 for comprehensive services. The across-the-board higher cost of a family day care home resulted from the smaller ratio of adults-to-youngsters, although the supervising mother would not command wages as high as a professional staffer in a day care center. Assumed wages were $6,000 for a professional early childhood educator, and $4,400 for a paraprofessional/family day care mother.[6]

The second study by Abt Associates, analyzed the operating budgets of 20 day care centers. In terms of programs offered, the centers studied apparently fit into the "custodial plus development component" and "comprehensive" categories. Composite budgets derived from the study gave these annual cost per child figures: $2,349 in a 25-child center; $2,223 in a 50-child center; $2,189 in a 75-child center. Assumed wages were $6,000 for a center teacher. The variable measured appears to be the ratio of staff-to-youngsters; high costs were due to low staff-to-student ratios, although the figures cited would seem to indicate modest economies of scale.[6]

The third study conducted by Weikart, presented annual per child cost estimates based on the assumptions of related services (health, counseling) priced at $295 per child per year, and salaries at the same level as the Abt Associates study. Variables were setting (family day care home or day care center), type of program (basically custodial or 40% devoted to teaching), and staff-to-student ratio. A staff-to-student ratio of 1:6 would cost $2,351 in a home and $2,247 in a center for basically custodial services. The same ratio, assuming 40% of the time devoted to instruction, would cost $2,656 in a home and $2,552 in a center. A family day care home, operating at maximum capacity, would cost more for similar services than a day care center. Assuming a staff-to-student ratio of 1:10, custodial services at a center would cost $1,784, while a center's program including an educational component would cost $2,039. With a staff-to-student ratio of 1:15, a custodial program would cost $1,553, and educational input would raise the price to $1,783.[6]

5.1.2 The Cost of Care in Family Day Care Homes and Day Care Centers

Children of working parents may be cared for in a family day care home. Usually this is the home of a non-relative. The family day care home typically handles fewer than 6 children, although federal regulations stipulate that 6 be the maximum number. Because of the limited size of these operations, annual cost per child is the highest of any approach due to the low staff-to-student ratio. Cost estimates range from $1,423 for custodial care to a minimum of $2,000 for more complete services. The highest estimate was $2,656 for a comprehensive care program offered in a family day care home. This estimate was based on the maximum staff-to-student ratio of 1:6; since few homes operate at maximum capacity, this cost estimate may be conservative.

Increasing numbers of children of working parents are found in day care centers. Such facilities deliver services at a somewhat lower annual cost per child than do family day care homes. This is largely due to higher staff-to-student ratios in day care centers, which more than offsets the higher start-up costs associated with these centers. The cost estimate range is similar to that for a family day care home; the minimum is $1,245 for custodial care. Comprehensive services cost at least $2,000 per child per year. Delivery of "custodial plus other variables" in a day care center has been estimated to range from $1,862 to $2,552.

5.1.3 Conclusions on the Cost of Care Outside the Home

The Brookings Institution staff concluded that group care arrangement costs are largely reliant upon the staff-to-student ratio. This is because staff salaries account for the greatest portion of operating costs; this holds true even if the staff is not on the professional level and unable to command maximum salaries. Day care center certified professionals generally do not command salaries commensurate to those paid in elementary teaching. There is some evidence that economies of scale are modest when speaking of center care with a comprehensive array of services. Perhaps this is due to the professional staff required to provide medical, counseling, and placement services.

Specific conclusions drawn by the Brookings Institution staff from the three studies cited are: 1) for a comprehensive day care program, including an educational component and the presence of auxilliary services, providing full-day services would "typically" cost $2,000 annually per

child, and 2) family day care homes are not the least-cost alternative, since the staff-to-student ratio is appreciably lower. The staff noted that their conclusions would be modified if: staff-to-student ratios were raised without a concommitant rise in services provided, or day care worker's salaries were to rise appreciably.[6]

A conclusion on a broader scale is that day care outside the home is an expensive proposition. It is almost the pint-sized equivalent of post-secondary education in terms of cost. Whereas economies of scale may result from raising the staff-to-student ratio when dealing with traditional education, it is unclear that this effect occurs in early childhood education. The risk concommitant to any educational economy of scale, deterioration of quality, may have especially deleterious effects in early childhood education. Conversely, if the day care principle continues to gain public acceptance, a cost-efficient means of providing it should be developed, particularly if day care will be asked to be accountable in the age of educational accountability.

5.2 Delivery of Services to Both Parent and Child

Another classification of approaches for delivery of early childhood services has been used by the Educational Commission of the States (Table VIII, Section 4.2.1). This classification is more comprehensive, including delivery of early childhood services to both the parent and/or the child. Some delivery options appear in both classifications.

According to the ECS matrix three possible approaches for the delivery of early childhood education may be delineated: 1) an approach based upon a pre-school group arrangement, as in-school programs, i.e., Head Start, day care, 2) an approach based upon reaching a widely-dispersed audience individually, ie., televised instruction for either parent or child, and regulated demonstration centers for provision of health services and parent training, and 3) an approach based upon a combination of these principles, i.e., televised instruction plus home visitation to train parents and/or children, or parent training through either home visitation or in-school instruction.

Approximate price tags for each approach do not follow the same order. The most costly approach is center-based instruction for pre-schoolers.

The third approach incurs costs in the moderate price range. The individual approach is the least costly.

Table VIII, compiled by the Education Commission of the States and reflecting 1970 cost data, supplies specific figures for in-school early childhood programs. Costs are on a per-pupil basis, and are as follows; day care (including educational component) = $1,500; Head Start = $1,050; in-school kindergarten = $1,700 -$900; in-school pre-kindergarten = $780 - $200.

The middle price range would include the options of home visitation to train parents of pre-schoolers, the combination home visit, TV instruction, group experience as typified by the early childhood effort of the Appalachia Educational Laboratory, and in-school parent training. The prices, on either a per-pupil or per-family basis, are: home visitation for parent training = $200 - $300; AEL pre-school = $242.15* per pupil; in-school parent training - (minimum) $100 per family.

The lowest price range would include the options of regulated demonstration centers to diagnose health deficiencies and train parents, television programs for the pre-school audience, and television programs to train parents. The costs associated with each option are: regulated demonstration centers = $25 per pupil; pre-schooler television programming (based on "Sesame Street") = $1.00 - $1.29 per pupil**.

A program with an in-school component or a group emphasis will cost more than televised instruction for either parent or child. In-school options should not be ruled out since they provide experience with a group that is essential to education. However, in comparison to other options, in-school is more expensive. Educational input is costly. The use of trained personnel either on a per-home or per-classroom basis adds to the cost of the educational service. An option for in-school instruction is to train volunteers or workers paid by another source (ie. the CTW-NYC summer experiments). To preserve quality, training must be effective.

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* Figure based upon more recent information from AEL. (Section 4.2.2)

** The $1.29 annual per-child cost for "Sesame Street" was cited more recently by former U.S. Commission of Education Sidney Marland, Jr., (see Section 4.2.1).

To maintain costs, training must be inexpensive.

Table VIII reports a per-pupil cost of $1,500 for day care. In terms of figures cited by the Brookings Institution (see Section 3.1), based upon the Westinghouse/Westat, Abt, Sugarman-Feldman, and Weikart surveys, the $1,500 price tag may be low. The figures provided by these surveys, and interpretations made by the Brookings staff, still place day care -particularly family day care - as the most expensive option.

5.3 The Component Parts of a Delivery System

However early childhood education or services are delivered, the delivery system has its component parts. Some components are common to most systems.

The first system component is the staff. Included within this component are teachers, paraprofessionals, aides, volunteers, television production personnel, consultants, administrators ... anyone who makes the system operate. Personnel has been identified by the Brookings Institution staff as the most expensive component when referring to the child target audience.

One way of decreasing the system's cost is to minimize the ratio of staff to students. This is often done in proprietary nursery schools, day care centers, or other group care arrangements. Costs may be kept down by minimizing the ratio of highly-qualified staff to paraprofessionals or volunteers, who in turn spend a greater percentage of time working with smaller groups of children. It would seem that the greatest minimization of professional staff to students occurs in televised instruction.

Currently there are efforts to follow-up televised instruction with person-to-person reinforcement often delivered by either paraprofessionals or trained volunteers. It is unclear whether either follow-up provided by a center-based staff or that provided by a home visitor offers a clear-cut optimization (of staff to student) over the other approach. More precise data are needed to determine this point.

The second system component is facilities. Facilities have not been identified as a major system cost possibly because of the use currently made of existing facilities. To expand facilities for group care would involve start-up costs whether or not the new facility required construction

or renovation. A method of lowering start-up costs is to use existing facilities. Homes, whether the child's own or a family day care situation, could be viewed as existing facilities. Use of existing facilities for auxiliary services, such as community health centers and counseling services, lower operating costs for both the center and the auxiliary facility. Portable delivery systems, such as the Toy Lending Library, disseminate instruction into the individual home via variable, but convenient, locations within existing facilities. Televised instruction reaches directly into the individual home, and qualifies as one of the lowest cost delivery options because of its ability to saturate the market through use of existing facilities. Almost all American households have television sets.

The third system component is materials. Previous sections of this memorandum have detailed cases in which educational materials exist or are being developed, some of which are suitable for large-scale electronic delivery. Research, development, and testing efforts are underway in many of the regional educational laboratories (to name but one source) to provide new insights and operational materials for early childhood education. Attention should go to the fact that materials now existing or on the drawingboards span a broad spectrum of media and materials; televised instruction with commercially-marketed accompanying materials, books, records, toys, audio-visual instruction for parents, and printed training instruction for paraprofessionals and aides illustrate the point. Note also that materials are developed or being developed for the different markets for early childhood materials; the children themselves, their parents, and caretakers. A final trend worth noting is that non-profit materials producers such as the Children's Television Workshop and the Appalachia Educational Laboratory are, as part of their work with parents, teaching them how to utilize objects currently in the home to foster educational play. The implementation primer for the Toy Lending Library includes a section on how to make toys. The "make good use of what you've alredy got" doctrine is also encouraged by the Office of Child Development for Home Start Programs. Utilization of existing, and previously ignored, materials lowers participation costs and brings the benefits of involvement to more parents and children.

6. ISSUES SURROUNDING EARLY CHILDHOOD EDUCATION: LOCAL, STATE, NATIONAL, OR PARENTAL CONTROL?

The discussion surrounding the extension of early childhood education may be outlined as revolving around these central points: 1) the moral question of where control should be, and 2) the financial question of who can afford to assume control.

6.1 Who Should Assume Control?

Although the United States has a long tradition of compulsory, publicly-supported education, this requirement has traditionally involved students between the ages of 5 or 6 and 16. The grade span covered is the primary grades through the secondary level. Even though many institutions of higher education are publicly supported, attendance is not compulsory. Education of children younger than the mandatory school attendance age has traditionally been left to parental initiative. It has only been in recent years that the educational potential of pre-school age children has been publicly recognized. Care of pre-school children has been the responsibility of the parents. Publicly-held assumptions regarding the quality of American life have long held that responsibility for young children was one of the most important parental responsibilities; an obligation that would be well rewarded by the satisfaction of guiding a youngster through his most formative years.

At first glance, resistance to the extension of care for young children outside the home would seem to come from irate parents reluctant to relinquish prerogatives traditionally reserved for them. Some resistance undoubtedly comes from such quarters.

Hesitation over extension of care facilities has been expressed by those who recognize that participation would be voluntary, and attractive to many families. The concern in this quarter arises over the shifting of decision-making power away from individual parents that accompanies increased availability of public programs. The expressed fear is that what begins as an optional service available on request becomes increasingly bureaucratic and arbitrary with the passage of time. In this case, what has faded is the parents' opportunity to guide his child during the formative years. Extension of public early childhood services, begun with

well-defined intentions, turns into a remotely controlled program whose prime responsibility is to insure its own self-perpetuation.

Moral arguments cannot be resolved on paper battlegrounds. The public mood in the early 1970's would seem to be in favor of extending early childhood services, perhaps largely due to the increasing economic role of women. Viewed within this context, parental initiative in securing early childhood education care outside the home may be basically motivated by the economic feasibility of using the services available. Without making short shift of the moral question, the financial viability of providing child care outside the home may be the crucial issue regarding this educational opportunity.

6.2 Who Can Afford to Assume Control?

Many of the outside-the-home child care programs currently in operation are provided by the private sector, either by proprietary institutions or voluntary organizations. Services provided by publicly-supported institutions have increased within the past decade. The fact that supply has shifted in part to public institutions does not erase the cost factor from either parental consideration or public scrutiny. Using the Brookings Institution estimate of $2,000 per child annually for comprehensive day care, the weekly cost is $40. Most families now purchasing child care pay less than $20 per week.[6] Data indicates that publicly-provided services reach those segments of the population who previously were unable to secure these services due to financial restraints. Therefore, outside-the-home child care arrangements are strongly dependent upon financial considerations.

Whoever pays the bill, whether directly through out-of-pocket payments or indirectly through taxes, remains a cardinal consideration due to the cost involved. Whether publicly-provided services become the purview of the local, state, or national government will probably be dependent upon the funds available to each government. The scale on which publicly-supported services are implemented will also depend upon the availability of funds. This situation assumes that public opinion favors extension of early childhood services with full realization of the financial commitment involved.

The precise cost remains open to question, and probably could not be determined until extended programs were operational for some time. Generally, it can be said that they would be costly. Schultze et al, writing in Setting National Priorities, The 1973 Budget, estimate that provision of free, public pre-school education to all 3 and 4 year-olds would cost the federal government $5 billion a year. This estimate is based on a 75% participation rate, and an annual cost of $1,000 per child.[6] Dr. Selma Mushkin, of the Urban Institute, estimated in 1969 that a fully available pre-primary education program for children between the ages of 3 and 5 would cost between $10 billion and $12.5 billion by 1975. The Mushkin estimate assumed an annual per child cost of $1,250, with 3/4 day attendance. The anticipated participation rate was not cited.[22]

Regarding the provision of widely-available free day care, Schultze and his collegues estimate a price tag to the federal government of $12 to $15 billion by 1977. Although this estimate includes before-and-after school care of schoolage children, the cost for pre-schoolers (those children up to age 5) was figured at $2,000 per child per year with a 50% participation rate. Extent of the free care was coverage of poor and moderately poor families (4 member households at or below $7,214 annual income). The same sources estimate that public provision of free day care to all youngsters under 6 would cost $28 billion. This aggregate is also prorated at $2,000 per child annually with an anticipated participation rate of 66%.[6] Dr. Mushkin's cost estimate for widely available service to a population ranging from birth to 3 year olds (presumably day care) ranges between $6.5 and $10.25 billion by 1975. The total was prorated at $2,000 per child with an 80% participation rate by children of working mothers.[22]

The estimates cited indicate a wide range in aggregate cost figures due, in part, to different underlying assumptions; it was not possible to compare the population projections upon which the estimates were based. However, any projected total should be compared to recent federal spending for day care and preprimary education. FY'71 federal spending totalled $688 million; $233 million for day care, $363 million for Head Start, and $92 million for other preschool programs under ESEA, Title I. FY 1972 estimates are for a total $866 million devoted to early childhood services; $404 million for day care, $364 million for

Head Start, and $98 million for Title I ESEA. FY 1973 estimates include a $969 million total divided among: day care, $507 million; Head Start, $369 million; Title I ESEA, $93 million.[6]

The scope of federal involvement in day care and pre-primary education is mitigated by large projected costs. The Nixon Administration has favored day care extension when coupled with work training for welfare mothers. The Mondale, Reid, Brademas bill, vetoed by President Nixon on December 10, 1971, was designed to extend child services with particular attention to poor children, who would be served without cost. The bill also provided for local control and parental involvement in decision-making affecting the program. In May, 1972, another bill came out of the Senate Committee on Labor and Public Welfare designed to overcome the President's objections. Authorized funding for the first year was reduced, the minimum size for sponsoring localities was raised, and full-day care would be offered only to handicapped children or those youngsters with parents already working. The pay scale, when applicable, remained the same as that proposed in the vetoed bill.[6] The Administration's day care plan is linked to welfare reform. Emphasis is on before-and-after school care provisions, in line with welfare reforms encouraging mothers of schoolage children to receive vocational training and mothers of younger children to remain at home. The states, cities of more than one-half million population, or Indian reservations would act as disbursal agents. The states or localities would appoint child development councils partially composed of participating parents. The Department of Health, Education, and Welfare would construct and administer new centers to be given priority utilization by the Department of Labor when placing children of participants in its work training programs. When these centers become filled the Labor Department could then purchase care from any existing care facility. Proposed initial funding was $750 million of which $50 million was for facility construction, and the remainder for providing or purchasing care for 291,000 pre-schoolers and 584,000 school-age youngsters.[6]

The preceding status report was culled from Setting National Priorities, The FY 1973 Budget, a publication of the Brookings Institution. The recently-released Special Analyses, Budget of The United States Government, Fiscal Year 1974

provides the following proposed figures on day care and early childhood education for the coming fiscal year. Federal outlays for early childhood education are estimated at $500 million, an increase of $58 million over the government's FY 1973 estimated spending. Of this total, $379 million will be for Head Start, a $30 million increase over the previous year. The Office of Child Development, the government agency responsible for many of the programs providing services to pre-primary age children including Head Start, will be funded at $260 million during FY '74, a budgetary increase of $31 million over FY '73. The government publication projects continued increases in day care funding and numbers of children served. The emphasis will continue to be upon provision of child care services in conjunction with parental employment training. Projected expenditures for employment-related day care will rise $65 million to $582 million, serving an anticipated 1,392,000 children or 89,000 more than served during FY '73. Day care provided in conjunction with non-employment-related services is budgeted at the same expenditure level while the anticipated number of children served through such programs will decline by 22,000.[31]

Comparisons of past expenditures, as revealed in the Brookings Institution report, with projected expenditures, as proposed in the government publication, are not clear cut. The Brookings staff worked from estimates of FY 1972 and FY 1973 expenditures. Figures cited in the government budgetary proposal included actual expenditures for FY 1972. Generally, Brookings estimates are higher than reported actual spending for Head Start and lower than reported actual spending for day care. Such generalizations should be made with caution since the proposed FY '74 budget analysis is organized differently for reporting purposes, and implementation of the budgetary proposals would represent changes in the disbursal mechanisms. Examples of proposed disbursal reorganization include educational revenue sharing and manpower revenue sharing. The basic principle behind the revenue sharing concept is to eliminate program funding by narrow, nationally-mandated categories while returning allocation powers to government levels closer to the particular needs of the specific area.[31]

Insofar as the revenue sharing concept involves state and local governments in determining the most efficient allocation of funds to meet area needs and in selecting local agencies to conduct specific programs, the full effect of this "new look" in disbursal mechanisms remains uncertain. Much may depend upon the amount returned to the states and localities under the revenue sharing formulae. Therefore, as of this writing, the status of legislation and funding for child care services is imponderable due to the recentness of the President's FY 1974 budget proposal.

Also germane to this issue is the Federal Revenue Act of 1971 which greatly increased allowable income tax deductions for child care. The 1971 legislation raised allowable deductions from a ceiling of $600 for one child and $900 for two or more children to $2,400 for one child, $3,600 for two children, and $4,800 for three or more children. The new provisions apply to two-parent families and to child care arrangements related to employment. Full deductions are allowed when the joint income does not exceed $18,000 and partial deductions are allowed when the joint income does not exceed $27,600. Schultze and his collegues calculate that the greatest savings will accrue to eligible parents in the higher income brackets, since savings for those in the $4,000 to $7,000 range will be minimal.[6] Nonetheless, given the current state of legislative and administrative counterproposals for extension of child care services, the Revenue Act of 1971 retains parental control over child care arrangements.

When viewed in the context of governmental budgeting exigencies, the question of perceived need arises. Would any governmental entity chose to implement public pre-primary education on a large scale when the results of on-going programs have been mixed? Data from Head Start and other pre-school projects has indicated that cognitive gains made by disadvantaged children while in attendance fade during the primary grades, so that upon completion of a couple of school years there is no distinction between pre-school alumni and disadvantaged children who began education at the mandatory school entrance age.[6] A final assessment remains open since the pre-school experience has yet to be shown to harm participants. Also, perhaps the longest-lasting gains are those in the affective and psychomotor domains.

Nonetheless, the California State Department of Education presented a plan to the state legislature to revamp the existing pre-primary/primary grade structure so that voluntary participation could begin at age 4. The plan marks the first state-wide attempt to publicly provide education for 4 year-olds. The anticipated participation rate for 4 year-olds is 75% or 250,000. The plan would be implemented over 5 years. When fully operational, the projected cost would be $351 million annually. The plan is being presented on the grounds that it is less expensive to practice preventive education than remedial education.[23]

7. CONCLUSIONS AND RECOMMENDATIONS REGARDING THE LARGE-SCALE ELECTRONIC DELIVERY OF EARLY CHILDHOOD EDUCATION

This memorandum has presented a review of the status, trends, and issues currently enveloping early childhood education. Based upon findings of increasing public acceptance and a desired extension of services plus the projected cost savings realized when mediated instruction reaches the parent and child at home, prospects for large-scale utilization of electronic technology for delivering early childhood education would appear to be favorable. The potential audience is sizeable; 17 million children are now under 5 years of age and this audience will grow slowly in coming decades. Assumptions regarding the extent of parent participation may vary depending upon estimates of the number of small children per family and the extent of one-parent households. However, the potential parent audience should number in the millions. Projected requirements for early childhood staff, on either the professional or paraprofessional level, identify this as an occupational growth group. The exact dimensions of this potential audience remains indeterminate; however, a potential audience of thousands may be anticipated. The existing structure for providing early childhood education and services would remain and be built upon should more education and services be delivered via large-scale electronic technology. All three dispersed markets, given their current configuration, could be reached by large-scale electronic technology. Television has permeated almost every American home, the primary location for most young children and their parents. Day care centers, nursery schools, family day care homes, or any group program for youngsters become centers for imported instruction and follow-up activities. The same institutions, plus post-secondary teacher training schools, could become centralized locations for imported instruction and relevant activities for those engaged in providing early childhood education and services.

The prospects are particularly favorable for television, whether the medium is used individually or in conjunction with person-to-person reinforcement. Furthermore, televised instruction for all 3 early childhood education markets looks possible. Less clearly defined are the prospects for the interactive electronic media, particularly two-way audio and interactive cable television, to service these markets. Theoretically the interactive electronic communication technologies could

provide service refinements. The use of computers, and computer-aided instruction, might be helpful in specific applications. The establishment of accessible data banks on early childhood materials and services is one application and will be tested by the Rocky Mountain demonstration, which will establish a nutritional data bank accessible by caretakers at child care centers throughout the region.

The favorable prospects for televised instruction in early childhood education have already been partially demonstrated by current examples of the medium's use in preprimary education. The commercial television networks and the Public Broadcasting Service (which regularly airs the productions of the Children's Television Workshop and other instructional suppliers) are clearly in evidence. Citizen groups, exemplified by ACT, are maintaining a public vigil over the networks in an attempt to translate grassroot sentiments into better quality children's programming.

The most pervasive example is "Sesame Street," which reached approximately nine million at-home viewers during one survey week in January, 1972. This sizeable audience represented a 20% gain in target audience over the previous year, and 50% gain in target audience over the initial season two years before. The boost in viewing is partially attributable to an increasing number of broadcast outlets, up 10% in two years.[24] Per-child costs are at the bottom of all delivery options; this is particularly relevant since public broadcasting does not recoup expenses by time sales. Televised preschool instruction is valuable for other reasons: the medium has the potential to reach the target audience at their varied locations through the near total saturation of receiving sets in American households; convenience, a premium factor in child care arrangements, is built in since the medium can penetrate into the home. However, the quality of the programming will be a key factor in determining whether the medium will be properly used or will be misused.

Instructional television suppliers have initiated attempts to use some form of person-to-person delivery to reinforce instructional goals. The target audience may be the parent, the child, or both. Examples include: the paraprofessional home visitor employed by the Appalachia Educational Laboratory's pre-school program, and the efforts of the Children's Television Workshop in utilizing Neighborhood Youth Corpsmen to work with children in viewing centers and its Appalachian Field Services Office to conduct parent workshops. The federal government, in funding Home Start, is also interested in determining the feasibility of delivering child services advice into the home.

All examples cited operate on the principle of person-to-person delivery by trained paraprofessionals with professional personnel serving in training, consulting, supervisory, or administrative capacities. The model accomplishes three things: 1) reinforcement is conducted in a friendly, non-didactic manner, 2) the budget is stretched by utilizing larger numbers of non-credentialed personnel able to service smaller numbers of children, thus providing a desirable staff-to-student ratio within the operational budget, and 3) career opportunities may be opened for participating paraprofessionals, aides, and volunteers.

The data is incomplete on the effectiveness of such arrangements. The Appalachia Educational Laboratory found that home visitation was a crucial element in the learning process, more so than the group experience. The structure of the media/personnel mix, i.e, the validity of this format for instructional design, will be explored by the Rocky Mountain ATS-F demonstration. Greater cost details are needed, particularly on the training costs for preparing paraprofessional help.

Therefore, it is recommended that increased attention should be focused upon training procedures for paraprofessional help. Training now appears to be conducted by the parent organization supplying the instructional material. Therefore training is localized. This is not considered undesirable by program suppliers since efforts are made to secure paraprofessional help indigenous to the population being served. However, it would seem that much of the training would be similar in nature and could be disseminated by large-scale electronic media, particularly television received in viewing centers. A good deal of the success of home-reinforcement programs rests with the paraprofessional;

therefore, greater attention should be paid to training procedures and their widest possible dissemination. Carefully-constructed televised instruction for personnel could promote training efficiency through the development of reasonably-priced quality instruction. Thought should be given to use of televised instruction for professional early childhood personnel development. Users would be institutions of higher education offering coursework in that specialty. This suggestion would assume greater priority should more states require certified personnel to staff pre-primary programs, thus increasing the need for credentialed staff.

Televised instruction has potential for parent training. Although it is less costly to instruct parents than children in group situations, televised instruction would offer the benefits of convenience, a premium for increased usage. Home visitation for parent training in conjunction with group instruction has been priced between $200 - $300; classroom training for parents (e.g., the toy lending library) may cost a minimum of $100 per family. From these figures it may be surmised that home visitation does not consume a disproportionate share of the expense in operating an in-school/home visitation parent training program. A low cost option may be the combination of televised parent instruction with follow-up home visitation. The lowest cost option would remain televised instruction only. Both options will be tested by planned and proposed demonstrations.

The interactive electronic technologies, such as two-way audio and interactive cable, have theoretical possibilities for enhancing the delivery of child services. Many of the on-going and planned demonstrations operate on a school-day or office hours schedule. Child care and education does not assume such neatly-packaged hours. Current attempts to deal with this difficulty are centered in developing a random entry - random exit format for instructional television programming so that viewing parents and staff will not be penalized for inability to watch regularly; this is the current intent of the Rocky Mountain programmers. Home Start projects should be designed to provide services on weekends and in the evenings so that the project design will correspond to the realities of child rearing. The interactive electronic technologies may provide the hardware for accessing an array of child care or education

services on an extended time basis. CATV refinements, such as data accession and facsimile could provide valuable aids to the parent. Two-way audio communications over long distances will be examined by the early childhood component of the Rocky Mountain demonstration. Two-way audio capabilities and talk-back television, with its potential array of services, have not penetrated American households to anywhere near the extent of receive-only television. Their presence and potentialities remain for the future.

Computers should have limited application in early childhood education. Unless future home cable technology should routinely include terminals, the immediate future of computer applications would lie in the creation of subject matter data banks with centralized dissemination terminals, an application to be demonstrated by the Rocky Mountain project, or dissemination through other media. CAI could be implemented in staff or teacher-training institutions. In the case of institutions of higher education, CAI might prove useful in training professional early childhood educators for the same reasons it would be used in any other discipline. Should certification be increasingly required, CAI may join other teaching methods in efficiently matching supply with demand. Barring a future of widely-available in-home terminals with access to computer data banks, computers will have limited application to early childhood education since the largest potential market, the children themselves, would not use them for instructional purposes.

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APPENDICES

APPENDIX A

TABLE I

PREPRIMARY ENROLLMENT AND POPULATION OF CHILDREN 3 to 5 YEARS-OLD, BY PLACE OF RESIDENCE, AGE, AND RACE: UNITED STATES, OCTOBER 1970

(Numbers in thousands)

Age and Race	Metropolitan, Central			Metropolitan, Other			Nonmetropolitan		
	Population	Enrolled		Population	Enrolled		Population	Enrolled	
		Number	Percent		Number	Percent		Number	Percent
Total 3-5 years	3,088	1,218	39.4	3,949	1,705	43.2	3,913	1,181	30.2
White	2,101	821	39.1	3,643	1,587	43.6	3,354	1,035	30.9
Other races	987	397	40.2	306	118	38.6	558	146	26.1
Negro	929	369	39.8	256	96	37.4	495	121	24.4
3 years	999	148	14.8	1,272	196	15.4	1,244	110	8.9
White	670	92	13.7	1,172	184	15.7	1,077	92	8.6
Other races	329	57	17.2	100	12	11.6	167	18	10.8
Negro	313	55	17.7	75	6	8.0	154	16	10.5
4 years	1,012	315	31.1	1,288	447	34.7	1,320	245	18.5
White	687	201	29.3	1,188	403	33.9	1,127	209	18.5
Other races	325	113	34.9	100	44	44.2	193	36	18.5
Negro	301	101	33.7	92	41	44.5	164	30	18.4
5 years	1,076	755	70.1	1,389	1,062	76.5	1,349	826	61.2
White	743	528	71.0	1,282	1,000	78.0	1,151	734	63.8
Other races	333	227	68.1	106	62	58.8	198	92	46.4
Negro	314	213	67.6	90	49	54.8	177	74	42.1

Source: Preprimary Enrollment, October, 1970, National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C. (1971).

APPENDIX B

TABLE IV

AVAILABILITY OF EARLY CHILDHOOD EDUCATION, SERVICES, PUBLIC FUNDING, AND ADMINISTRATIVE COORDINATION BY STATE

State	Kindergarten Mandatory (M) or Permissive (P)	Additional Information on Kindergarten	Kindergarten Entrance Age	State Expenditure Kindergarten Total 1968-1969	Total 1969-1970	Per Pupil 1968-1969	Per Pupil 1969-1970
Alabama	P (in cities)	No state aid	5	None			
Alaska	P	State aid provided to kindergarten as part of state foundation program at one-half amount for elementary school pupils.	5 by Nov. 2	Not available			
American Samoa	P	3-, 4-, and 5-year-olds are taught together in village houses. 3,000 now enrolled. Plan to have all 3,500 qualified for program funded through Dept. of Education enrolled by 1971-1972. Budget from Gov. of American Samoa.	Entrance to level 1 if 6 by Dec. 31	Preliminary four-week program only in 1968-69. Includes funds for 3-, 4- & 5-year-olds.	$84,000	FY 1971 figure averages $60 per pupil	$42
Arizona	P	Local school district tax supports public kindergarten programs. Dept. of Education has produced kindergarten guide and lends advisory support where needed	5 by Dec. 31	None			
Arkansas	P	There is no state aid granted local school districts for kindergarten programs. There are four projects involving eight institutions and 16 kindergarten classrooms. Annual appropriation for research and teacher training - FY 1969, $160,000; FY 1970, $200,000.	5 by Oct. 1	None			
California	M	State aid as part of foundation program - ADA	4 years 9 months	$78.3 million	$245 million	Not available	
Colorado	P	Required for accreditation but not required by statute. State aid as part of foundation program.	Schools must accept at 6 years	Not available		Varies district to district with foundation program.	
Connecticut	M	Aid provided as part of foundation program.	5 by Jan. 1	$11.3 million	$11.5 million	$200	$200
Delaware	P	State aid provided to kindergarten as part of foundation project.	5 by Jan. 1	$935,908	$1.6 million	$182	$203

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State	State Expenditure Prekindergarten Total 1968-1969	Total 1969-1970	Per Pupil 1968-1969	Per Pupil 1969-1970	Additional Information on Prekindergartens	Other State-Supported Services To Pre-First Graders (Medical, Dental, etc.)
Alabama	None				No state effort to promote.	Some medical services and day care for ADC children.
Alaska	None				Many agencies have been working in past two years to ask that legal school age be lowered to 3. Preschool would be optional.	Partially - through public health & welfare services.
American Samoa	3- and 4-year olds grouped with 5s.					Free medical and dental care for all Samoans.
Arizona	None					Through Health and Welfare Depts. Some programs offer additional services.
Arkansas	None				None	Through Health and Welfare.
California	$16 million	$16 million	$1,000-$1,400	$1,000-$1,400	Promotion of prekindergarten programs in cooperation with federal Head Start, children's centers, etc. State Preschool & Migrant Day Care Programs.	Medical, Social Services, Nutrition.
Colorado	None				Promotion of prekindergarten but no funding.	Day care
Connecticut	$488,400	$619,000	$ 200	$ 200	State provides consultants, evaluation, workshops, etc. State aid provided if operated by local board of education & meeting certain legal requirements (certified teachers, not less than 180 days, not less than 2-1/2 hours daily).	Nutritional services provided through federal school lunch programs. Other services available through Welfare Dept.
Delaware	None				Governor & State Board of Education support public prekindergarten education. Legislation for pilot prekindergarten program may be introduced this year.	Through Head Start & Day Care programs. State Board of Health provides medical & dental assistance.

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State	Administrative Agency		Form of Coordination Among Administrative Agencies
	Kindergarten	Prekindergarten	
Alabama	State Department of Education. Private Organizations	Department of Pensions and Securities.	Informal. No person designated as coordinator.
Alaska	State Department of Education.	State Department of Health and Welfare. Head Starts are separate agencies with separate funding.	Formal. Meetings called to plan total preschool program with BIA, Dept. of Health and Welfare, Head Start, Dept. of Education and universities.
American Samoa	Program for 3, 4, and 5 year olds is administered by the combined state and local, as one unit.		Not applicable.
Arizona	Local school districts administer their programs.	Health and Welfare	An early childhood association meets regularly. Current chairman is medical doctor from State Health Department.
Arkansas	State Department of Education and a few local school districts	There are only private and parochial prekindergarten programs.	Informal. State Welfare Department supervises and licenses day care centers. State Health Department prepares and refines maintenance of health and sanitation standards.
California	Administered by local school districts. Department of Education provides administrative support.	State Department of Education Division of Compensatory Education.	4-C program. Joint funding with 39 community action groups. Purchase of service contracts between Welfare and Education.
Colorado	Local district	Department of Social Services and local district	Informal through 4-C. State Dept. of Social Services supervises & licenses day care centers & homes; Health Dept. oversees maintenance of health standards. Early childhood consultant from Education Dept. is on Governor's Licensing Board.
Connecticut	Local boards of education; many independent schools.	Local boards of education; over 700 independent schools.	Informal between programs administered by local boards of education & other local agencies & between state Board of Education & other state agencies. State Dept. of Health licenses all independent pre-k programs. State Dept. of Education carries the educational component of the licensing program.
Delaware	State Department of Education		Formal, informal & advisory through 4-C; almost daily contact with Office of Child Development. Early Childhood Education Supervisor is on Day Care Advisory Council.

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State	Kindergarten Mandatory (M) or Permissive (P)	Additional Information on Kindergarten	Kindergarten Entrance Age	State Expenditure Kindergarten Total 1968-1969	State Expenditure Kindergarten Total 1969-1970	State Expenditure Kindergarten Per Pupil 1968-1969	State Expenditure Kindergarten Per Pupil 1969-1970
Florida	P	Aid based upon approved instruction units for kindergarten. No state effort to promote prekindergarten programs.	5 on or before Jan. 1	$6,265,981	$9,500,000	$339	$335
Georgia		No state support for kindergartens. But Atlanta & Columbus have public kindergartens for all 5 year olds. Atlanta also has public pre-k & day care programs. 43 school systems have public kindergartens supported by ESEA Title I funcs. Total expenditure for kindergartens in 1969-1970 was $73.8 million ($625 per pupil) & for pre-k vas $672,527 ($625 per pupil).		None			
Guam	M	Federally supported through ESEA, Title I, Head Start. 1,000 kindergarten students in 1969. 550 in 1970.	5	$ 391,247	$ 244,597	$391	$445
Hawaii	P	98.2% of 5 year old population of 16,817 are enrolled in kindergartens, both public and private. Only 2,615 of them attend private programs.	5 by Dec. 31	$4.8 million	$5.6 million	$339	$401
Idaho		A kindergarten bill has been introduced which, if passed, would provide 100% state supported permissive kindergarten programs. Governor and State Superintendent of Public Instruction support it. At present there are 35 kindergarten programs operating with local & federal funds.		None			
Illinois	M	State aid as part of the regular school reimbursement program. Maximum per pupil dollar based on equalization formula.	5 on or before Dec. 1	Not available		$330	$400
Indiana	P	Kindergartens are provided state funds through State Dept. of Public Instruction within public school grant on half-day per capita basis.	5	$6.1 million	$9.8 million	$ 76	$118
Iowa	P	State aid provided through foundation program. State Dept. of Public Instruction provides leadership in upgrading kindergarten programs through consultative services & inservice workshops.	5	$12.5 million	$12.9 million	$229	$236
Kansas	P	State aid provided as part of foundation program, counted as one-half regular student.	5 on or before Sept. 1	Information not available on student basis, only on teacher basis.			

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State	State Expenditure Prekindergarten Total 1968-1969	State Expenditure Prekindergarten Total 1969-1970	State Expenditure Prekindergarten Per Pupil 1968-1969	State Expenditure Prekindergarten Per Pupil 1969-1970	Additional Information on Prekindergartens	Other State-Supported Services To Pre-First Graders (Medical, Dental, etc.)
Florida	None				None	
Georgia	None				Proposal for money before Legislature.	None
Guam	None				No promotion	Free medical & dental examination.
Hawaii	None				400 economically disadvantaged or physically handicapped 3 & 4 year olds are enrolled in special programs. Also, 700 3- and 4-year olds are in Head Start programs for which Dept. of Education is delegate agency. Comprehensive plans are in process for education - birth to age 4.	None
Idaho	None				Dept. of Education is designing a prekinderg[illegible]n program. Within next year program proposed will be available.	
Illinois	None				State promotion of workshops for administrators & teachers. Dept. of Curriculum Development involved.	Yes, through Dept. of Public Welfare & local school districts.
Indiana	Only local and federal funds.					Pre-first grade medical, dental, nutritional, etc. services for children whose families are at or nearing poverty level.
Iowa	$405,000 (appropriation to Dept. of Social Welfare to use as matching funds for federal day care program).	$405,000	$780	$780	None	State aid for handicapped prekindergarten children through Dept. of Public Instruction - $83 per pupil.
Kansas	None				A program of early childhood education is being promoted.	None

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AVAILABILITY OF EARLY CHILDHOOD EDUCATION, SERVICES, PUBLIC FUNDING, AND ADMINISTRATIVE COORDINATION BY STATE

State	Administrative Agency		Form of Coordination Among Administrative Agencies
	Kindergarten	Prekindergarten	
Florida	State Department of Education	None	
Georgia	State Department of Family and Children Services	State Department of Family and Children Services	Advisory
Guam	State Department of Education	State Department of Education	Not applicable.
Hawaii	State Department of Education	Department of Social Services	Formal. Department of Social Services, after consultation with the Dept. of Health, Education, & fire marshal, prescribes & publishes rules, regulations & minimum standards for preschools. Administered by Dept. of Social Services.
Idaho	Proposed legislation would place kindergartens under local boards with general supervision of State Dept. of Education.		
Illinois	State Department of Education	None	
Indiana	State Department of Education	No state agency administration with exception of day care which is administered & licensed by state Dept. of Welfare.	Parent-Cooperative councils, Methodist Church Councils, Indiana Association for the Education of Young Children (Advisory & Coordination) and 4-C.
Iowa	State Department of Education	Department of Social Welfare	Informal.
Kansas	State Department of Education	State Dept. of Health. Private day care centers and nursery schools.	Not applicable.

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AVAILABILITY OF EARLY CHILDHOOD EDUCATION, SERVICES, PUBLIC FUNDING, AND ADMINISTRATIVE COORDINATION BY STATE

State	Kindergarten Mandatory (M) or Permissive (P)	Additional Information on Kindergarten	Kindergarten Entrance Age	State Expenditure Kindergarten Total 1968-1969	State Expenditure Kindergarten Total 1969-1970	State Expenditure Kindergarten Per Pupil 1968-1969	State Expenditure Kindergarten Per Pupil 1969-1970
Kentucky		There are no public kindergartens.	5 by Dec. 31	None			
Louisiana	P	State aid on same basis as for grades 1-12. Teachers supplied on a 28-1 ratio.	4.8	Not available			
Maine	M	Aid as part of state foundation program.	5 by Oct. 15	Not available			$166
Maryland	M by Sept. of 1973	State aid at one-half pupil unit based on equalization formula.	5	$3.3 million	$3.7 million	$185	$185
Massachusetts	M by 1973	State aid provided as part of foundation program.	4.8	$18.8 million	$22.0 million	$298 These figures include funds for pre-k programs.	$354
Michigan	P	State aid provided as part of foundation program.	5 by Dec. 1	$46.3 million	$49.3 million	$251	$272
Minnesota	P	State aid as part of foundation program.	5 by Sept. 1	$6,752,763	$6,897,780	$108	$112
Mississippi		Legislation has been introduced in current legislative session which would provide public school kindergartens to be administered through State Dept. of Education. Governor's Committee on Children & Youth has supported legislation & stressed need for licensing day care centers.	5 by Dec. 1	None			
Missouri	P	Foundation program aid for kindergarten is based upon one-half of the total days attended by kindergarten children.	5	$4 million	$4.4 million	$118	$129
Montana	P	No state aid provided. Legislation for public kindergartens was rejected by 42nd Legislative Assembly.	5	None			
Nebraska	P	State aid as part of foundation program, based on ADM.	5 before Oct. 15	$ 494,048	$ 464,547	$ 17	$ 17

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AVAILABILITY OF EARLY CHILDHOOD EDUCATION, SERVICES, PUBLIC FUNDING, AND ADMINISTRATIVE COORDINATION BY STATE

State	State Expenditure Prekindergarten Total 1968-1969	State Expenditure Prekindergarten Total 1969-1970	State Expenditure Prekindergarten Per Pupil 1968-1969	State Expenditure Prekindergarten Per Pupil 1969-1970	Additional Information on Prekindergartens	Other State-Supported Services To Pre-First Graders (Medical, Dental, etc.)
Kentucky	None				No state effort to promote prekindergartens.	None
Louisiana	None				State promotion of workshops for administrators & teachers. Dept. of Curriculum Development involved.	Yes, through Dept. of Public Welfare & local school districts.
Maine	None				Attempt to pass early childhood education legislation.	
Maryland	None				State Board of Education Research Task Force charged with ongoing development.	Day care & nutritional (school lunch).
Massachusetts					Prekindergarten aid included in the entire kindergarten program.	
Michigan	None				State Board of Education, for 5th consecutive year, has endorsed legislation which would provide $1.5 million in state funds to be matched by $1.5 mil. in local funds for prekindergarten programs.	State funds for kindergarten can be used for auxiliary services such as health, nursing, examination, speech correction, school diagnostician, etc.
Minnesota	None				Dept. of Education proposed permissive legislation for four-year-olds.	None
Mississippi	None				None	None
Missouri	None				State Dept. of Education encourages local school districts to provide prekindergarten programs when local funds can be made available.	Children of families qualifying for state welfare may receive some additional services.
Montana	None				None	None
Nebraska	None				Individuals promoting.	Only those through private or federal funding.

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State	Administrative Agency		Form of Coordination Among Administrative Agencies
	Kindergarten	Prekindergarten	
Kentucky	State Department of Education.	State Department of Education.	None
Louisiana	State Department of Education.	State Department of Education. State Department of Public Welfare.	Formal. State Department of Education or Public Welfare.
Maine	State Department of Education.	Department of Health & Welfare for Day Care centers.	Department of Health & Welfare advisory for Day Care Centers.
Maryland	State Department of Education.	State Department of Education. Department of Employment & Social Services for Day Care.	Informal, advisory coordinating committee for child care.
Massachusetts	State Department of Education.	State Department of Education & Public Health Department.	
Michigan	Local boards.	Local boards.	Not applicable.
Minnesota	State Department of Education.	Department of Public Welfare.	Informal and advisory.
Mississippi	---	---	---
Missouri	State Department of Education.	Local public schools.	Not applicable.
Montana	State Department of Education.	State Department of Education.	
Nebraska	State Department of Education.	Welfare Department.	

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State	Kindergarten Mandatory (M) or Permissive (P)	Additional Information on Kindergarten	Kindergarten Entrance Age	State Expenditure Kindergarten Total 1968-1969	State Expenditure Kindergarten Total 1969-1970	State Expenditure Kindergarten Per Pupil 1968-1969	State Expenditure Kindergarten Per Pupil 1969-1970
Nevada	P	State aid provided through foundation program.	5 by Dec. 31	.6 of elementary per pupil in guaranteed basic support			
New Hampshire	P	State aid as part of foundation program to those districts which qualify.	Local Option	$ 230,595	$ 284,908	$312	$375
New Jersey	P	State aid as part of foundation program for 4- and 5-year-olds.	5 before Oct. 1	Not available			
New Mexico	None	Existing kindergarten programs in NM are federally funded for Indian or disadvantaged children or military dependents. The State Dept. of Education has used some supplemental funds for pre-first programs in ready areas. House Bill 34 passed House Education Committee in February, would allow school districts to set up pre-primary programs with state funds.		None			
New York	P	1969-1970, $604 per child per year for full day; $302 per child per year for one-half day as part of foundation program.	4.9 by Sept. 1	$93 million		$604	$604
North Carolina	P	State funds now provided for 18 model development programs on 2 year basis. State hopes to be at 25% of need level by Sept. 1971. Aid will be provided as part of regular state support program when fully funded.	5 by Oct. 16	$ 500,000	$ 500,000	$900	$900
North Dakota	None	A bill providing for state aid for kindergarten failed in both the 1969 & 1971 legislative sessions.	5	None			
Ohio	P	State aid for kindergartens is provided through state foundation program. Legislation is being introduced in current session of General Assembly to lower compulsory school age to 5	5 by Sept. 30 or through early entrance testing if child is 5 before Jan. 1	Not available			
Oklahoma	P	State aid provided as part of foundation program; amount based on ADA.	5 by Nov. 1	None	$2.2 million	None	$ 66
Oregon	P		6 by Nov. 15 of year entering grade 1	None			
Pennsylvania	P	School districts receive reimbursement for instruction from the Dept. of Education at same rate for kindergarten as for any other grade level.	4	$24.8 million	$26.9 million	$300	$332

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State	State Expenditure Prekindergarten Total 1968-1969	State Expenditure Prekindergarten Total 1969-1970	State Expenditure Prekindergarten Per Pupil 1968-1969	State Expenditure Prekindergarten Per Pupil 1969-1970	Additional Information on Prekindergartens	Other State-Supported Services To Pre-First Graders (Medical, Dental, etc.)
Nevada	None				The State Dept. of Education has developed in their master plan for education a program for early childhood education, ages 3 to 5.	None
New Hampshire	None				No state effort to promote prekindergarten.	None
New Jersey	Not available - $100,000 supplemental funds for year-round Head Start from State of New Jersey.				Money inducement - reimbursement for ages 4- and 5-year-olds enrolled in kindergarten.	Same as for all other public school children.
New Mexico	None				None	None
New York	None				State supervision of federally-funded programs for disadvantaged.	Funds for diagnosis.
North Carolina	None				Discussion now taking place on 3's & 4's, but there are no immediate plans.	Only through regular state health and social services.
North Dakota	None				None	None
Ohio	None				None	None
Oklahoma	None				No state effort to promote prekindergarten programs.	Nutritional-School Lunch Division of State Dept. of Education. Medical, dental-public health clinics, university hosps.
Oregon	None				State supervision of federally funded programs for disadvantaged.	Lunch services; limited medical services.
Pennsylvania	None				A division of early childhood education was established in 1966 to service local districts through consultant visits, publication of guides & newsletters & to coordinate all educational preschool programs.	These services are available through various Dept. of Health & Welfare programs in addition to Dept. of Education offerings to enrolled pupils.

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State	Administrative Agency		Form of Coordination Among Administrative Agencies
	Kindergarten	Prekindergarten	
Nevada	State Department of Education.	Department of Health, Welfare and Rehabilitation administer nursery school and day care programs.	
New Hampshire	State Department of Education.	State Division of Welfare.	
New Jersey	State Department of Education.	State Department of Education & Private; Dept. of Community Affairs; Bureau of Children's Services.	Consultant service and compulsory approval.
New Mexico	---	---	---
New York	State Department of Education.	State Dept. of Education, CAP, Private groups, Dept. of Social Services, Head Start, Churches.	Informal and advisory. More coordination is planned.
North Carolina	State Department of Education oversees pilot programs operated by local administrative units.	Social Service handles day care.	
North Dakota	Local districts.	Local districts.	None. State requirements and laws must be met by local districts.
Ohio	State Department of Education.	State Department of Public Welfare.	None
Oklahoma	State Department of Education.	Tuition & federal title programs - State Dept. of Education Head Start - State OEO Office.	Agreement may be made between public school and local OEO agency for Head Start.
Oregon	State Department of Education.	State Department of Education.	Informal and advisory.
Pennsylvania	State Department of Education.	Departments of Welfare, Commerce, Education.	A Governor's committee for child development and day care has been established as an interagency approach to meeting the needs of various federal, state and local programs.

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State	Kindergarten Mandatory (M) or Permissive (P)	Additional Information on Kindergarten	Kindergarten Entrance Age	State Expenditure Kindergarten Total 1968-1969	State Expenditure Kindergarten Total 1969-1970	State Expenditure Kindergarten Per Pupil 1968-1969	State Expenditure Kindergarten Per Pupil 1969-1970
Puerto Rico	P	State funding. 397 kindergartens now exist.	5	$6 million	$6.8 million	$300	$342
Rhode Island	M	State aid as part of foundation program.	5 Before Dec. 31	Breakdown by individual grades not available			
South Carolina	P	Not part of foundation program. Annual grants to State Dept. for pilot program. $500,000 in both 1969-1970 & 1970-1971.	5 on or before Nov. 1	$ 500,000	$ 500,000	$145	$140
South Dakota	P	State aid under same minimum foundation grant as grades 1-12.	5 by Nov. 1	Information not available			
Tennessee	P	Funds do not permit fully supported state program. Funds are used to finance limited program in each school district of state.	5 by Oct. 31	$ 350,000	$ 950,000	$280	$290
Texas		State aid provided in Sept. 1970 first to "educationally handicapped."	5.5 by beginning of school year Sept. 1	None			
Utah	P	State aid as part of foundation program. Utah now has kindergarten program in all but two small rural districts.		Not available. Aid not tabulated according to grade.			
Vermont	P	State aid funds provided as part of overall state aid given school districts.	4-1/2 or 5	No specific amounts. Kindergarten programs are added into student population figures for general state aid.			
Virginia	P	State aid as part of foundation program.	5	Information not available, included with other grades.			
Washington	P	State aid as part of foundation program.	5	$10.3 million	$9.7 million	$184	$185
West Virginia	M by 1973	Public kindergartens initiated in 1971. State expenditure for 1971-72 expected to be $3.5 million. State funds to be matched by federal funds insofar as possible.	5	None			

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State	State Expenditure Prekindergarten Total 1968-1969	Total 1969-1970	Per Pupil 1968-1969	Per Pupil 1969-1970	Additional Information on Prekindergartens	Other State-Supported Services To Pre-First Graders (Medical, Dental, etc.)
Puerto Rico	None					Lunch services. Limited medical services. Day care services.
Rhode Island					Aid for prekindergarten on same basis as K-12.	Whatever is spent by local school committees for such services is reimbursable under state aid formula.
South Carolina	None				No state promotion.	No state funds.
South Dakota	None				Guidelines for nursery schools adopted. Early childhood office disseminates information	Receives same services as grades 1-12.
Tennessee	None				No state prekindergarten program.	Limited to those programs initiated and supported in part or in full with federal funds.
Texas	None				State promotion, bilingual education and special education only.	Only those provided by federal funds.
Utah	None					None
Vermont	None	$125,000	None	Not Available	State aid for pre-k is 12½%, local 12½% to match Federal Title IV-C, Social Security Act in 4-C Program.	Some pilot demonstration projects; well-baby & immunization programs.
Virginia	$ 97,422	$657,906	Not Available		State Depts. of Education, Health, Welfare, all promote pre-k. Local, state & federal funds available.	Medical care through local health depts. Dental treatment, nutrition consultation.
Washington	$ 25,000	$150,000	$250	$250	Special state funding for central city areas of which there are 12.	Special funding for the disadvantaged.
West Virginia	None				2 Early Childhood Edution Demonstration Centers opened in 1971. The state plan calls for 7 regional centers to serve children from 3 to 9. An important component of the Centers is the coordination of the efforts of all agencies delivering services to young children.	25% state support for day care with limited medical & dental services. Nutritional services for day care.

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State	Administrative Agency		Form of Coordination Among Administrative Agencies
	Kindergarten	Prekindergarten	
Puerto Rico	The Office of Economic Opportunity & Private Institutions.	Urban Renewal Program. Social Services Dept.	Informal and advisory on request from Department of Education.
Rhode Island	State Department of Education.	State Department of Education.	
South Carolina	State Department of Education.	OEO and Head Start.	None
South Dakota	State Department of Education.	State Department of Education & Department of Public Welfare for Day Care programs.	Informal on day care and nursery.
Tennessee	State Department of Education.	Department of Public Welfare & State Office of Economic Opportunity.	Formal & advisory. State Dept. of Education has representative of State Day Care Advisory Comm. to State Dept. of Public Welfare & representatives on Governor's Interdepartmental Committee on Child Development.
Texas	State Department of Education.	State Dept. of Education for Special Education. State Dept. of Public Welfare for Day Care Centers.	Governor's Council on Early Childhood Development.
Utah	State Department of Education.	State Dept. of Education works with districts having Head Start programs. Consultant service provided on request. State Welfare Dept. supervises Day Care Centers.	Informal, advisory.
Vermont	State Department of Education.	Day Care Licensing Unit, State OEO.	Day Care licensing which includes any program accepting preschoolers has formal relationships in regulations & programming with state depts. of education, public safety, environmental control, health & social welfare.
Virginia	State Department of Education.	Department of Welfare & Institutions, Department of Health.	Informal Division of State Planning and Community Affairs.
Washington	State Department of Education.	State Department of Education, Department of Public Assistance.	Informal.
West Virginia	State Department of Education.	State Department of Education.	

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State	Kindergarten Mandatory (M) or Permissive (P)	Additional Information on Kindergarten	Kindergarten Entrance Age	State Expenditure Kindergarten Total 1968-1969	State Expenditure Kindergarten Total 1969-1970	State Expenditure Kindergarten Per Pupil 1968-1969	State Expenditure Kindergarten Per Pupil 1969-1970
Wisconsin	P	State funds as part of foundation program at rate of one-half membership per enrollee.	5	No answer			
Wyoming	P	State aid as part of foundation program. 50 half-day students in ADM entitled to one "classroom unit" of $11,800 (1971-1972).	5 before Sept. 15	$ 325,977	$ 564,032	$ 62	$109

Source: The Education Commission of the States Task Force on Early Childhood Education, Early Childhood Development Alternatives for Program Implementation in the States. Denver: Education Commission of the States, 1971.

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AVAILABILITY OF EARLY CHILDHOOD EDUCATION, SERVICES, PUBLIC FUNDING, AND ADMINISTRATIVE COORDINATION BY STATE

State	State Expenditure Prekindergarten Total 1968-1969	Total 1969-1970	Per Pupil 1968-1969	Per Pupil 1969-1970	Additional Information on Prekindergartens	Other State-Supported Services To Pre-First Graders (Medical, Dental, etc.)
Wisconsin	None					These costs are a part of general state aid formulae. Services are encouraged and paid as are aids for other school services.
Wyoming	None				No state promotion.	Well-clinic & crippled children's clinics through public health department.

Source: The Education Commission of the States Task Force on Early Childhood Education, Early Childhood Development Alternatives for Program Implementation in the States. Denver: Education Commission of the States, 1971.

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State	Administrative Agency		Form of Coordination Among Administrative Agencies
	Kindergarten	Prekindergarten	
Wisconsin	Local school districts and some nonpublic schools.	Local school districts and some nonpublic schools.	Nonpublic programs coordinated by nonpublic schools.
Wyoming	State Department of Education.	State Welfare Department licenses day care centers.	

Source: The Education Commission of the States Task Force on Early Childhood Education, Early Childhood Development Alternatives for Program Implementation in the States. Denver: Education Commission of the States, 1971.

APPENDIX C

TABLE V

STATE PROGRAMS FOR PERSONNEL DEVELOPMENT

State	No. of Colleges with degree programs in early childhood education.	No. of junior or community colleges with associate degree programs	No. of colleges with some work in early childhood education
Alabama	5	0	5 (in addition to those with degree programs)
Alaska	1	1	2
American Samoa	0	0	0
	There is preservice and inservice training for early childhood teachers by qualified professional personnel.		
Arizona	0	0	3
Arkansas	3	1	9
California	6	54	61
Colorado	2	2	7
Connecticut	7	1 (3 others pending)	11 (in addition to those offering degrees. Includes community colleges.)
Delaware	2	0	3
Florida	4	6	8
Georgia	9	2	17
Guam	1	0	1
Hawaii	1	0	3
Idaho	No answer	No answer	No answer
Illinois	3	1	20
Indiana	4	0	18
Iowa	3	4	12
Kansas	Not available	Not available	Not available
Kentucky	0	0	7
Louisiana	7	0	19
Maine	1	0	5

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TABLE V

STATE PROGRAMS FOR PERSONNEL DEVELOPMENT (cont'd)

State	No. of colleges with degree programs in early childhood education.	No. of junior or community colleges with associate degree programs.	No. of colleges with some work in early childhood education.
Maryland	3	3	9
Massachusetts	Over 100	Less than 100	Over 250
Michigan	4	0	26
Minnesota	8	2	10
Mississippi	3	0	10
Missouri	2	2	11
Montana	1	0	3
Nebraska	3	0	6
Nevada	0	0	2
New Hampshire	2	0	7
New Jersey	5 State Colleges	2 beginning para-professional programs	All state colleges do.
New York	Approximately 24	10	All State University Colleges. Nursery - 6th grade
North Carolina	0	0	35-40
North Dakota	No response	No response	No response
Ohio	3	?	29
Oklahoma	1	0	19
Oregon	0	3	6
Pennsylvania	6	8	27
Puerto Rico	0	0	3
Rhode Island	4	0	4
South Carolina	4	1	12
South Dakota	0	0	10
Tennessee	15	0	Information not available.
Texas	13	Not available	13

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TABLE V

STATE PROGRAMS FOR PERSONNEL DEVELOPMENT (cont'd)

State	No. of colleges with degree programs in early childhood education	No. of junior or community colleges with associate degree programs	No. of colleges with some work in early childhood education
Utah	5	0	5
Vermont	1	0	8
Virginia	16	16	32
Washington	4	2	15
West Virginia	10	0	1
Wisconsin	7	0	0
Wyoming	0	0	1 (University of Wyoming)

Source: The Education Commission of the States Task Force on Early Childhood Education, Early Childhood Development Alternatives for Program Implementation in the States. Denver: Education Commission of the States, 1971.

APPENDIX D

TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
Alabama	No	No	No	No	No	No response	Yes, with endorsement of nursery and kindergarten.
Alaksa	No	Yes	No	No	No	State Department of Education	Yes, certificate endorsed for early childhood.
American Samoa	No	No	No	No	No	Not applicable.	No. Early Childhood training required.
Arizona	No	Yes	No	No	No	State Department of Education	Yes. At present only certificate is issued.
Arkansas	No	Yes	No	No	No	State Department of Education Certified kindergarten teachers.	Yes, but courses in kindergarten and early childhood education are required in addition to the regular elementary certificate.

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TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
California	No	Yes	No	No	No	For day care personnel and prekindergarten teacher and administrators, a children's center permit is required. It and kindergarten credentials are issued by Bureau of Education and Teacher Certification.	Yes
Colorado	Licensing Requirements.	Yes	No	No	No	State Department of Education certifies kindergarten teachers State Department of Social Services determines day care personnel qualifications for licensing purposes.	Yes

APPENDIX D

TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
Connecticut	Yes	Yes	No	Yes	No	State Department of Education - Only if opereated under Board of Education	Yes, if so endorsed by the preparing institution.
Delaware	No	Yes	Yes	Yes	Yes	Day Care is under Bureau of Child Development (Division of Social Services). All other personnel are certified by TEPS. State Department of Public Instruction	No.
Florida	No	Yes	No	No	No	State Department of Education	No.

APPENDIX D

TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
Georgia	No	Yes	--	Yes	--	State Department of Education - Criteria being developed.	No
Guam	No	Yes	Yes	Admin. - Yes Teacher - No	--	State Department of Education	Yes
Hawaii	No	Yes	No	No	No	State Department of Education	Yes, for kindergarten.
Idaho	No	Yes	No	No	No	No answer	No answer.
Illinois	No	Yes	No	No	No	State Teacher Certification Board. Elementary School Certificate	Yes
Indiana	Yes	Yes	No	No	No	Day care-State Department of Public Welfare: kindergarten teachers - State Department of Public Instruction.	Yes

APPENDIX D

TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
Iowa	No	Yes	Yes	Yes	Yes	Department of Public Instruction	Yes, for kindergarten. No for prekindergarten.
Kansas	No	Yes	No	Yes	No	State Department of Education	Yes
Kentucky	No	Yes	No	No	No	State Department of Education	Yes, but this regulation will be changed effective Sept. 1, 1971.
Louisiana	No	Yes	No	Yes	No	State Department of Education	No
Maine	--	Yes	--	No	No	State Department of Education	Yes, for kindergarten.
Maryland	Yes	Yes	Yes	No	No	State Department of Education	Yes, Certificate in Early Childhood Education.
Massachusetts	Yes	Yes	No	Yes	No	State Department of Education. Public Health Department	Yes

APPENDIX D

TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
Michigan	Yes	Yes (teachers only)	No	Yes (teachers only)	No	State Department of Education. Day Care requirements handled through Department of Social Services. Prekindergarten teacher requirements applicable only if the program is connected with a public school.	Yes
Minnesota	No	Yes	No	Yes	No	Department of Public Welfare licenses nursery schools. Department of Education for Prekindergarten and kindergarten personnel	No

APPENDIX D

TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
Mississippi	No	Yes	No	No	No	State Department of Education. Certification.	Yes
Missouri	No	Yes	No	Yes	No	State Department of Education and State Colleges and Universities.	Yes
Montana	No	Yes	No	Yes	No	State Superintendent of Public Instruction. Applies to public kindergartens and prekindergartens conducted in public schools	Yes
Nebraska	No	Yes	No	No	No	State Department of Education	Yes, for kindergarten

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(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
Nevada	Yes	Yes	No	No	No	Day Care personnel - Health, Welfare and Rehabilitation Department. Kindergarten teachers and administrators - State Department of Education.	Yes
New Hampshire	No	Yes	No	No	No	State Department of Education	Yes
New Jersey	Yes	Yes	Yes	Yes	Yes	State Department of Education	Nursery school and kindergarten endorsement.
New Mexico	No answer	No answer	No answer	No answer	No answer	No answer	No answer
New York	No	Yes	No	Yes	No	State Education Department and cities of Buffalo and New York	Yes
North Carolina	No	Yes	No	No	No	State Department of Public Instruction	An Early Childhood Education Certificate is designed for teachers of the kindergarten primary level.

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TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
North Dakota	No answer	No answer	No answer	No answer	No answer	State Department of Public Instruction	Yes, with at least two courses in kindergarten department.
Ohio	No	Yes	Permits for aides	No	No	State Department of Education	No, must have a kindergarten primary certificate.
Oklahoma	No	Yes	No	Yes	No	Teacher education and certification section of State Department of Education.	---
Oregon	No	Yes	No	Yes	No	Day care - State Welfare Division. Kindergarten and prekindergarten - State Department of Education.	Yes
Pennsylvania	Yes	Yes	No	Yes	No	Department of Education and Welfare	Yes
Puerto Rico	No	Yes	No	No	No	Department of Education	Yes
Rhode Island	No	Yes	No	Yes	No	State Department of Education	Yes

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TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
South Carolina	No	Teacher - yes Admin. - no	No	No	No	State Department of Education	Yes, provided 12 semester hours earned during the next 24 months following employment as a kindergarten teacher. This gives Early Childhood Education Certificate.
South Dakota	No	Yes	No	No	No	Department of Public Instruction	Yes
Tennessee	No	Yes	No	No	No	State Board of Education	Yes, with additional endorsement in K-3.
Texas	No	Yes (Teachers only)	No	Yes (Special ed. only)	No	Texas Education Agency	Yes, kindergarten endorsement.
Utah	No	Yes	No	Recommended	No	State Board of Education	Yes. nursery through grade 3
Vermont	No (in process)	Yes	No	No (in process)	No	State Department of Education and Training Colleges	---

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TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
Virginia	No	Yes	No	No	No	State Department of Education. Department has developed recommended guidelines for local districts for employment of paraprofessionals.	Yes
Washington	No	Yes	No	No	No	Superintendent of Public Instruction	Yes
West Virginia	Yes	Yes	No	No	No	Welfare Department for day care. State Department of Education for kindergarten and prekindergarten.	No
Wisconsin	Yes	Yes	Yes	Yes	Yes	Department of Public Instruction, if a part of a school district program. Certification of teachers to non-public schools is optional with the agency that operates them.	---

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TABLE VI: CERTIFICATION REQUIREMENTS AND ADMINISTRATION

(continued)

State	CERTIFICATION REQUIREMENTS FOR: Day Care Personnel	Kindergarten teachers and administrators	Kindergarten paraprofessionals	Prekindergarten teachers and administrators	Prekindergarten paraprofessionals	Agency Responsible for Certification	Elementary Certificate Applicable for Kindergarten and/or Prekindergarten Teaching
Wyoming	No	Yes	No	No	No	Certification and Placement Division of State Department of Education	Yes, with addition of one course in education with emphasis on kindergarten teaching.

Source: The Education Commission of the States Task Force on Early Childhood Education, Early Childhood Development Alternatives for Program Implementation in the States. Denver: Education Commission of the States, 1971.